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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

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PRODUCTION OF ALL PAPER FOR MONTH OF NOVEMBER

According to Statistics Just Issued by the Federal Trade Commission There Was on Hand at the Domestic Mills at the End of the Month Four Days' Average Output of News Print, Thirteen Days' Average Output of Book Paper, Nine Days' Average Output of Paper Board, Nineteen Days' Average Output of Wrapping Paper, and Seven Days' Average Output of Bag Paper.

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 10, 1923.—Following the tabulation of production, shipments, and stocks regularly carried in the statistical summary by the Federal Trade Commission, this month's issue carries a special tabulation for identical mills, reporting to the Commission for October and November, 1920, 1921, and 1922, in news print, book paper and paper board.

The attached tabulation is a summary of production, shipments, and stocks of paper mills in the United States, as reported to the Federal Trade Commission, for the month of November, 1922. This summary is compared with the month of November, 1918, to 1921, inclusive.

The average production for all grades, except boxboard, is based upon the production for the years 1917 to 1921, inclusive, and the average stocks are based upon the stocks carried for the years 1918 to 1921, inclusive.

Figures for boxboard prior to March, 1920, were included in paper board.

The average production and stocks for boxboard are based upon the figures tabulated during the period March, 1920, to December 31, 1921.

The production has been classified for convenience into 12 grades, according to the grades of paper manufactured by the reporting mills.

Some mills making several grades appear in more than one group which causes duplication in the body of the tonnage tables in the number of mills.

For each grade the number of mills includes all mills commonly operating on that grade, regardless of whether they produced any tonnage of that particular grade during the month. In other words, it includes all mills reporting either production or merely stocks or shipments of that grade.

The stocks of paper carried by different mills depend not only upon the condition of the market but also upon the kind of paper made, trade, customs, etc.

Tonnage Summary

Production shipments and stocks of paper, by Grades, for the month of November, 1922, compared with November, 1921, 1920, 1919 and 1918, together with average production and stocks.

Grade	Number of mills	Stocks on hand first of month, Net tons	Production, Net tons	Shipments, Net tons	Stocks on hand end of month, Net tons
News Print (Standard and Special Grades of News):					
November, 1922	75*	19,745	127,983	128,077	19,651
November, 1921	86	23,015	104,604	104,492	23,127
November, 1920	83	22,596	122,993	125,323	20,266
November, 1919	81	16,100	116,603	117,367	15,336
November, 1918	61	20,732	101,403	101,838	20,297
Average	..	.....	110,000	.....	25,307
Standard News (Included in News Print):					
November, 1922	62*	15,468	117,439	117,537	15,370
November, 1921	67	18,227	97,521	96,853	18,895
November, 1920	67	19,651	111,313	114,365	16,599
November, 1919	56	12,646	101,264	102,120	11,790
November, 1918	50	16,731	86,371	86,406	16,696
Average	..	.....	99,700	.....	20,900
Book (M. F., S. S. C. and Coated):					
November, 1922	92*	38,458	93,065	94,753	36,770
November, 1921	87	32,343	73,544	68,827	37,060
November, 1920	94	20,826	89,564	85,827	24,563
November, 1919	96	26,828	84,085	83,630	27,293
November, 1918	87	29,753	65,374	65,634	29,493
Average	..	.....	73,325	.....	30,305
Paper Board—Total (Straw, Fiber, Leather, Chip, Box, Etc.):					
November, 1922	221*	52,968	198,947	196,051	55,864
November, 1921	223	57,169	172,582	169,971	59,780
November, 1920	252	42,222	133,818	127,072	28,969
November, 1919	254	48,417	182,940	188,273	43,084
November, 1918	227	41,756	148,671	148,922	41,505
Average	..	.....	157,850	.....	49,989
Boxboard (Included in Paperboard):					
November, 1922	131*	23,623	146,984	144,387	26,220
November, 1921	126	29,805	127,249	125,089	31,965
November, 1920	148	18,753	91,092	86,138	23,707
Average	..	.....	111,425	.....	26,048
Wrapping (Kraft, Manila, Fiber, Etc.):					
November, 1922	147*	48,661	77,300	80,422	45,539
November, 1921	130	52,378	65,905	68,078	50,205
November, 1920	144	20,700	65,920	61,034	25,586
November, 1919	164	39,596	63,394	70,434	32,556
November, 1918	160	34,595	59,572	59,091	35,166
Average	..	.....	59,150	.....	43,482
Bag (All Kinds):					
November, 1922	42*	3,551	19,805	19,826	3,530
November, 1921	38	3,737	19,161	19,148	3,750
November, 1920	40	2,362	13,152	12,729	2,785
November, 1919	46	2,765	17,047	17,380	2,432
November, 1918	40	3,938	14,150	14,138	3,950
Average	..	.....	13,275	.....	3,362
Fine (Writing, Bonds, Ledgers, Etc.):					
November, 1922	98*	36,490	31,666	31,276	36,880
November, 1921	102	33,957	24,609	25,177	33,389
November, 1920	109	28,968	31,208	29,991	30,185
November, 1919	117	33,017	32,468	32,334	33,151
November, 1918	115	30,425	30,322	27,283	33,464
Average	..	.....	26,675	.....	33,192
Tissue (Toilet, Crepe, Fruit Wrappers, Etc.):					
November, 1922	91*	7,448	17,284	17,393	7,339
November, 1921	86	6,570	15,169	15,928	5,811
November, 1920	97	6,806	9,653	8,344	8,115
November, 1919	90	6,469	14,524	14,776	6,217
November, 1918	87	5,201	11,472	11,472	5,578
Average	..	.....	12,275	.....	6,737
Hanging (No. 2 Blank, Oatmeal, Tile, Etc.):					
November, 1922	24*	3,461	11,453	11,890	3,024
November, 1921	21	9,429	7,505	8,078	8,856
November, 1920	24	1,809	9,698	8,963	2,544
November, 1919	26	3,599	8,222	9,841	1,980
November, 1918	19	2,524	5,688	5,976	2,236
Average	..	.....	6,950	.....	4,693
Felts and Building (Roofing, Sheathing, Etc.):					
November, 1922	48*	7,914	36,948	36,673	8,189
November, 1921	45	6,513	29,759	29,533	6,739
November, 1920	50	13,461	16,961	16,306	14,116
November, 1919	51	5,956	28,416	28,827	5,545
November, 1918	50	8,514	19,698	20,818	7,394
Average	..	.....	25,025	.....	8,853
Other Grades (Specialties Not Otherwise Classified).					
November, 1922	106*	21,137	27,093	26,915	21,315
November, 1921	87	19,546	23,038	22,374	20,210
November, 1920	95	14,230	25,177	23,692	15,715
November, 1919	90	15,491	21,785	20,905	16,371
November, 1918	73	10,371	21,716	21,283	10,804
Average	..	.....	19,650	.....	14,466
Total—All Grades:					
November, 1922	..	239,833	641,544	643,286	238,101
November, 1921	..	244,657	535,876	531,606	248,927
November, 1920	..	173,980	518,144	499,281	193,843
November, 1919	..	198,248	569,484	583,767	183,965
November, 1918	..	187,809	478,066	475,988	189,887
Average	..	.....	504,175	.....	220,386

*This is the correct number of mills reporting production, shipments or stocks for November, 1922. By clerical error, the October bulletin and those for several previous months, slightly exaggerated the number. The count of mills for previous months will be corrected in a later issue.

The following stocks were reported on hand at terminal and delivery points on November 30, in addition to the mill stocks shown in the tabulation: Book paper, 2,510 tons; paper board, 110 tons; fine, 23 tons; and "other grades," 274 tons; totaling 2,917 tons.

Stocks of paper board, boxboard, fine, felts and building, and "other grades" increased during the month; stocks of all remaining grades decreased.

Stocks of all grades reported by manufacturers at the end of November amounted to 241,018 tons, including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported news print stocks and tonnage in transit aggregating 233,791 tons.

Ratio of Stocks to Average Production

Comparing the stocks on hand at the domestic mills on November 30 with their average daily production, based upon the combined production for 1918 to 1921, inclusive, the figures show that:

News print paper mill stocks equal four days' average output.

Book paper mill stocks equal 13 days' average output.

Paper board mill stocks equal nine days' average output.

Wrapping paper mill stocks equal 19 days' average output.

Bag paper mill stocks equal seven days' average output.

Fine paper mill stocks equal 35 days' average output.

Tissue paper mill stocks equal 15 days' average output.

Hanging paper mill stocks equal 11 days' average output.

Felts and building paper mill stocks equal eight days' average output.

Miscellaneous paper mill stocks equal 27 days' average output.

Total paper mill stocks of all grades equal 11 days' average output.

Tonnage of Identical Mills

The following tabulation is a special summary of production, shipments, and stocks of news print paper, book paper, and paperboard for identical mills, for the months of October and November, 1920, 1921, and 1922:

(Net Tons, 2,000 Pounds)

Grade	Number of identical mills	Stock first of month	Production	Shipments	Stock end of month
News Print:					
October, 1922	71	18,201	127,899	127,034	19,066
November, 1922	71	19,066	125,689	125,800	18,953
October, 1921	71	29,421	99,368	106,802	21,987
November, 1921	71	21,987	102,209	101,311	22,885
October, 1920	71	23,925	119,958	122,153	21,730
November, 1920	71	21,730	119,290	121,749	19,271
Book:					
October, 1922	79	29,571	81,574	80,644	30,501
November, 1922	79	30,501	82,411	83,642	29,270
October, 1921	79	32,992	68,452	70,999	30,445
November, 1921	79	30,445	68,959	63,983	35,421
October, 1920	79	19,024	86,103	86,516	18,611
November, 1920	79	18,611	82,557	79,071	22,097
Paper Board:					
October, 1922	174	50,555	178,165	181,762	46,958
November, 1922	174	46,958	177,028	175,000	48,986
October, 1921	174	49,820	158,865	159,616	49,069
November, 1921	174	49,069	148,564	144,228	53,405
October, 1920	174	31,207	154,582	151,552	34,207
November, 1920	174	34,207	107,871	102,138	39,940

Special Note—The import and export figures (which have heretofore been carried in this report) as shown by the records of the Department of Commerce, are omitted from this issue of the Statistical Summary, for the reason that the import figures for October, 1922, are not yet available. The import and export figures for October will appear in the December, 1922, issue of the summary.

Loss of Production

The idle machine time reported to the Commission for November, 1922, is shown by grades in the attached tabulation.

The number of machines includes only those machines for which idle time was reported during the month. It does not include the machines in 33 mills that were closed down completely for the month.

The total number of machines may include duplications because the reports may count the same machine twice, if idle for different reasons during different parts of the month, or if idle part of the time on one grade and part of the time on another.

The reasons tabulated for lost time are "lack of orders" and "repairs." "Other reasons" include "lack of material," "lack of water power," etc.

The time lost in November, 1921, is given by grades and reasons, for purposes of comparison.

McEvoy Paper Co. Sold

[FROM OUR REGULAR CORRESPONDENT]

SYRACUSE, N. Y., January 8, 1923.—The McEvoy Paper Company of Amboy was sold to the Third National Bank of Syracuse for $8,050 at a public auction conducted by Harry H. Farmer, referee, at the Court House December 28.

By the purchase the bank acquires title to the mill, water power and the site upon which the plant is situated.

Loss of Production

MONTH OF NOVEMBER, 1922 (WITH NOVEMBER, 1921, FOR COMPARISON)

	Lack of Orders		Repairs		Other Reasons		Total	
	1922	1921	1922	1921	1922	1921	1922	1921
News Print:								
Number of machines	0	11	3	15	13	17	16	43
Total hours idle	0	1,360	230	1,027	1,149	1,737	1,379	4,124
Book Paper:								
Number of machines	23	116	5	42	17	62	45	220
Total hours idle	6,171	15,555	135	2,859	2,382	3,232	8,688	21,646
Paper Board:								
Number of machines	77	152	65	46	63	74	205	272
Total hours idle	14,568	31,123	8,915	3,059	14,158	12,821	37,641	47,003
Wrapping:								
Number of machines	7	40	23	29	11	43	41	112
Total hours idle	486	10,324	3,255	1,962	1,899	3,800	5,640	16,086
Bag:								
Number of machines	2	4	6	7	8	8	16	19
Total hours idle	96	830	566	189	1,077	479	1,739	1,498
Fine:								
Number of machines	55	88	51	63	14	58	120	209
Total hours idle	6,867	14,762	6,024	7,394	697	3,780	13,588	25,936
Tissue:								
Number of machines	23	12	53	21	14	30	90	63
Total hours idle	1,349	664	2,893	2,271	2,780	3,228	7,022	6,163
Hanging:								
Number of machines	0	5	4	1	2	3	6	9
Total hours idle	0	680	733	129	88	397	821	1,206
Felts and Building:								
Number of machines	19	20	14	15	19	19	52	54
Total hours idle	2,583	4,165	393	783	2,762	1,243	5,738	6,191
Other Grades:								
Number of machines	23	30	22	26	10	23	55	79
Total hours idle	2,631	4,143	3,098	1,914	1,627	3,040	7,356	9,097
Total number of machines	229	478	246	265	171	337	646	1,080
Total hours idle	34,751	83,606	26,242	21,567	28,619	33,757	89,612	138,950

EIBEL PROCESS CO. BRINGS SUIT IN U. S. SUPREME COURT

Action Is Brought Against Minnesota & Ontario Paper Co. of International Falls, Minn., for Infringement of the Eibel Patents on Wires for Paper Making Machines—Main Contention Is On the Words "Substantial" and "Highly" Mentioned in Original Eibel Patent—Defense Contends That Case Differs From Remington-Martin Case Decided by Judge Mayer in New York in 1916.

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 10, 1923.—An argument was held before the United States Supreme Court on Monday in docket No. 178, which is the case of the Eibel Process Company against the Minnesota and Ontario Paper Company and which is of peculiar interest to paper manufacturers because of the importance of the Eibel process on paper machines.

Former Decisions

The Eibel Company was represented by Frederick P. Fish while the Minnesota and Ontario was represented by Amasa C. Paul. The arguments, necessarily, were extremely technical while the legal points made were based on a decision handed down in England regarding the validity of the Eibel patent in that country where it was held invalid, and the decision handed down in 1916 by Judge Mayer in New York in the case of the Eibel Company against the Remington-Martin Company.

Argument For Eibel Co.

Mr. Fish in his argument on behalf of the Eibel Company told the court that the main contention in the case are the words "substantial" and "high" mentioned in the original patent inasmuch as some of the paper concerns who tilt their machines up at one end only have a tilt of from 5 to 6 inches while the Eibel process calls for a tilt of some 14 inches. As soon as the Eibel process became known, it so greatly increased the speed of the paper machines, Mr. Fish told the court that the "process spread like wildfire" through the paper industry. He called particular attention to the fact that the Eibel process is not a drainage adjustment but is for the speeding up of the production of the machines. The process, Mr. Fish said, increases the speed of the machine anywhere from 15 per cent to 40 per cent. He contended in speaking of the words "substantial" and "high" that these words, as set forth in the patent, are not indefinite. He said that the pitch of the machine varies in height in different cases and therefore Eibel in his patent could not state any certain number of inches at which a machine would have to be pitched to obtain the result claimed for the Eibel process. Mr. Fish told the court that at the present time about 3,400 tons of news print paper are being turned out per day by machines using the Eibel process.

Argument by Mr. Paul

Mr. Paul, in his argument, told the court of the Fourdrinier paper making machines which are now in use by the Minnesota and Ontario Company. He admitted that these machines have been blocked up on one end and that this has been done since the Eibel patent was issued. He called the court's particular attention to the fact that the English courts have declared the patent invalid. This decision was rendered, he said, in 1911. Mr. Paul contended that the record in this case is different from the case heard in New York in which the Eibel Company was upheld by the court. He called particular attention to the record of the paper machines run at Lisbon Falls, stating that those machines, with a pitch of 1¼ inches are running at a speed of 545 feet per minute and this is being done by an adjustment device and by blocks.

In concluding his argument before the court Mr. Paul said:

"It is submitted

"(1) That the claims of the patent in suit require, by their plain terms and the terms of the specification, that the so-called 'substantial' pitch given to the making wire be such that gravity alone, due to pitch, brings about speed equality between the stock and the wire, and that this was the basis of the decision of the Circuit Court of Appeals for the Second Circuit sustaining the patent in the Remington-Martin case.

"(2) Concededly, if this is the correct interpretation of these claims, defendant's machines do not infringe.

"(3) Unless the word 'substantial' and other like expressions in the specification and claims of the patent in suit, require a sufficient pitch to be given to the making wire to bring about speed equality between stock and wire by gravity due to pitch alone, these claims are invalid, under the statute, for the reasons hereinbefore pointed out.

"(4) If the claims of the patent in suit are construed to cover defendant's machines, in which speed equality between stock and wire is brought about mainly by the head in the flow box and the drag of the making wire, and only to a small extent by gravity due to the pitch of the wire, said claims are invalid, in view of the patents and machines of the prior art in which the same three factors were used in the same way, and in substantially the same proportions, to bring about this result."

Uncas Paper Board Co. Prepares to Start

[FROM OUR REGULAR CORRESPONDENT]

NORWICH, Conn., January 4, 1923.—The Uncas Paper Board Company, which has been incorporated to operate the Thamesville paper mill, formerly the Ironsides Board Co., which was bought at auction a month ago by James E. Smith of Baltimore, elected officers at a meeting held here Wednesday.

The following were elected: president, James E. Smith of Baltimore; vice-president, Alvah Miller of New York; treasurer, Arthur C. Hastings of New York; secreary, Frank W. Browning of Kitemaug. These, with Joseph H. Eilers, superintendent of the mill, comprise the directors.

The company is capitalized at $1,500,000.

Following his purchase of the mill, Mr. Smith had work started actively at once in overhauling the machinery in preparation for starting the large paper machine as soon as possible. This work has been pushed actively by a gang of about 40 millwrights and machinists and the mill has already begun to get in its paper stock. From 35 to 40 carloads have been ordered of which 15 have arrived.

It is expected that the large paper machine may be started by a week from Monday or at least by the Monday following that, and the second and third machines will follow in the next two or three weeks thereafter, which will bring the mill to a capacity production and give employment to about 200 men. Except for about 25 men who handle the loading and unloading of paper, all the employees are in the skilled class and receive correspondingly high wages.

The contracts for fuel oil have been closed and a supply will be received at once enough to carry the mill over the three cold months. There are three fuel oil tanks with capacities respectively of 12,000, 6,000 and 3,000 barrels.

President Smith, who was here Wednesday, stated that there was a bright outlook for good business for at least two years to come. Prices on all box board had advanced $5 a ton on January 2.

Superintendent Joseph H. Eilers moved here from New Haven Wednesday with his family and is occupying the superintendent's house on West Thames street, which is part of the mill property.

A Mr. Chalmers, who was formerly master mechanic a few years ago, has been engaged for the same position again and the office head has been engaged. He is a Boston man.

We Still Have a Limited Quantity Unsold

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PAGEL, HORTON & CO., Inc.

Sole Agents

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GOOD PROGRESS IN PLANT OF VALLEY PAPER MILLS CO.

Foundation for Main Building Nearly Completed and Officers of the Company State the Plant Will Be Ready for Operation Early in the Fall—Plant Will Be Equipped With Two Machines With a Capacity of Fifty Tons Per Day—Light Weight Book Paper Will Be Made—Peshtigo Paper Co. and Fort William Paper Co. to Sell Bonds—Fort Howard Paper Co. Improvements.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., January 9, 1923.—Construction work on the new paper mill of the Valley Paper Mills Company at Neenah is progressing favorably. The foundation for the main building is about two-thirds completed and brick for the walls has been ordered. It is not probable, however, that bricklaying will be started before next spring as it is planned to permit the concrete foundations to dry out thoroughly.

The new plant is being erected near the plant of the Lakeview Paper Company and the site was selected because of an abundance of exceptionally pure spring water.

The main building will be 627 feet long and 175 feet wide on one end. The other end of the building will be considerably narrower. It will be of brick and steel construction, fireproof throughout.

Plans for manufacturing have been changed in the last few months. It was originally intended to make glassine and greaseproof papers and Emil Pohl, said to be an expert in the manufacture of that kind of paper, was connected with the company and his processes were to be used. Differences with Mr. Pohl arose, however, and he is no longer with the company. It was announced that light weight book papers are to be manufactured. The mill will be equipped with two machines and will have a capacity of fifty tons a day.

William C. Nash, formerly general superintendent of the old Lakeside Paper Company, is general superintendent of the new concern and designed the building and equipment. Mr. Nash also has been connected with the Gilbert Paper Company and the Fox River Paper Company.

Officers of the company say they are confident that the plant will be ready for operation early in the fall. The paper machines have not been ordered, it was said.

Peshtigo Paper Co. to Issue Bonds

The Wisconsin Railroad Commission has issued a permit to the Peshtigo Paper Company to dispose of $600,000 worth of ten-year gold debenture bonds, paying interest at the rate of 8 per cent and also to issue 5,000 shares of common stock of no par value.

The commission also has authorized the sale in this state of $200,000 serial gold bonds of the Fort William Paper Company of Fort William, Ontario, Canada. These bonds are listed as Class A and are secured by a first mortgage.

Installation of a sprinkler system in the two mills of the Peshtigo Paper Company at Peshtigo has been started. The apparatus is being put up by a Des Moines concern and will require several months to complete the work.

Reductions in Freight Rates

Important reductions in freight rates on paper products from the Chicago territory, which includes Wisconsin to Pacific coast states and other places in the west, effective about Jtnuary 15, have been announced. The reductions are sufficient to make it possible for Middlewest paper manufacturers to place their products in the western market at a price which will compete with western made goods.

The announcement stated that reductions have been made for two groups. The southern group includes California, Nevada, Arizona and New Mexico.

The reductions will have the effect of changing of rates on straight car loads of toilet paper from $1.42 to $1.19 per hundredweight to the Southern group; and from $1.42 to $1.25 to the Northern group on carload minimums of 40,000 pounds. The rate on carload minimums of 26,000 pounds on mixed napkins, toilet paper and paper towels has been cut from $1.87½ per hundredweight to $1.26 in the Southern group and to $1.35 in the Northern group. Paper tablets in carload lots are reduced from $1.58 to $1.25 in both districts.

The reductions on other kinds of paper products are just as material. Heretofore, paper mill men say, it was almost as cheap to ship their products by rail to the East coast and then by way ot Panama Canal to San Francisco, as to ship overland by rail to the west coast.

Fort Howard Paper Co. Addition Nearly Ready

The addition to the Fort Howard Paper Company mill at Green Bay is almost completed, only a few minor details remaining to be finished. The company will be occupying the new quarters in the very near future. The addition will give the company much additional space, for want of which it has been handicapped for some time.

Paper mill men here have been advised that the new mill of the New Westminster Paper Company, Ltd., at New Westminster, B. C., Canada, has started operations and has orders on its books sufficient to keep it operating for several months. The company was promoted by Henry M. Lord and M. F. Herb of Peshtigo, and J. J. Herb of Appleton. It manufactures tissues and other lightweight papers.

Spruce Falls Co. Plant at Kapuskasing Burned

[FROM OUR REGULAR CORRESPONDENT.]

KAPUSKASING, Ont., January 7, 1923.—Two men lost their lives here today in a fierce battle with fire that destroyed important parts of the new $4,000,000 paper mills of the Spruce Falls Company.

The two men who paid with their lives met death 150 feet in the air. They had taken up their position on top of the chip bins, which are located on the top of the main building. When the flames suddenly sprang through the highest windows they were engulfed in a sea of flames and smoke. The remains showed that they had died of asphyxiation. The dead men are: R. E. Doherty, Superintendent of Power for the Spruce Falls Company, and William Shingo, expert acid maker for the same company. Mr. Doherty was from Ashland, Wis., and Mr. Shingo came from Oshkosh, Wis.

Ernest Joanisse is the hero of the fight. Disregarding the dense smoke and the leaping flames, he entered the burning building and brought out J. Stevens, who was overcome with fumes, and who was unable to extricate himself from the flames which burned him severely. It is believed tonight that he will recover.

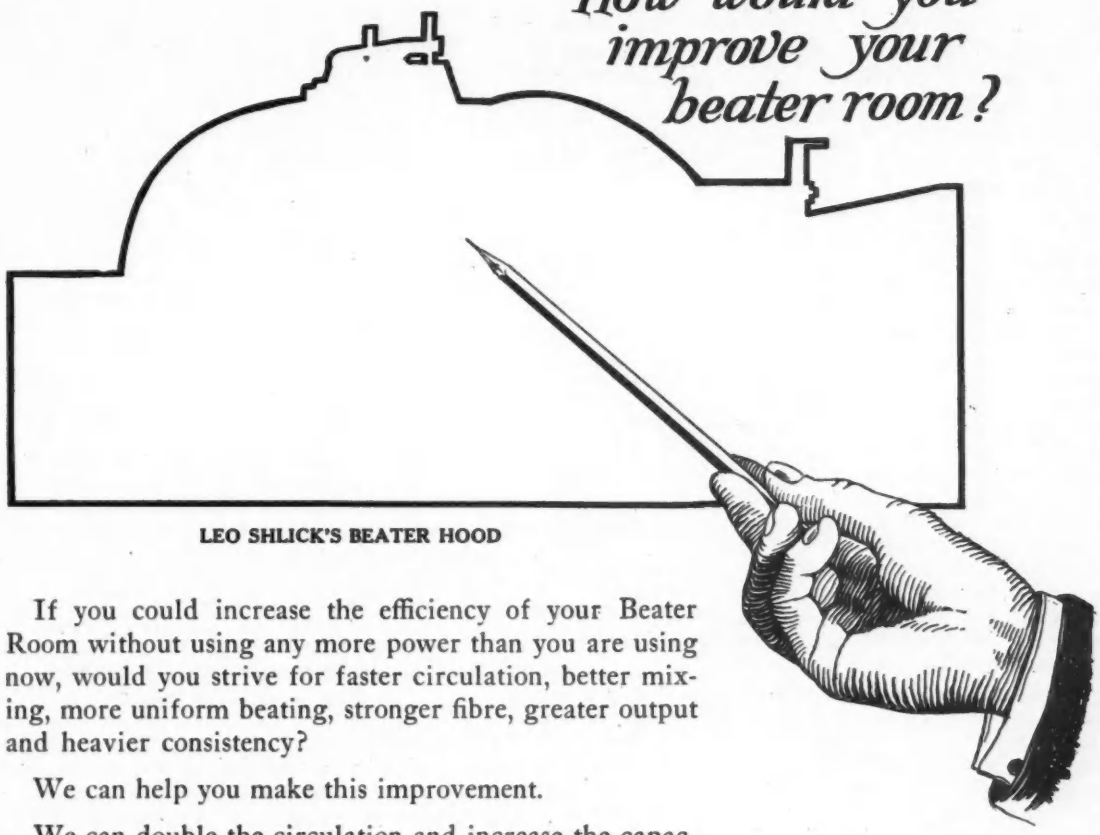
The $4,000,000 new mill had started operations only a month ago. The fire is thought to have broken out through spontaneous combustion in the chip bins, which are located in the digester building. Up until 3 o'clock Sunday afternoon the fire was confined to the chip bins, but later the flames burst through the roof.

Only the efficient waterworks system and the persistent efforts of the men and women of Kapuskasing saved the other buildings of the plant.

The bodies of the victims will be shipped tomorrow to their homes in Wisconsin, while the operations of the Spruce Falls Company will partly cease for a short time.

The output of the Spruce Falls Company, of which S. J. Sensenbrenner, of Neenah, Wis., is president, S. A. Mundy, vice president and J. C. Kimberly, secretary, is 120 tons of sulphite pulp per day.

How would you improve your beater room?



LEO SHLICK'S BEATER HOOD

If you could increase the efficiency of your Beater Room without using any more power than you are using now, would you strive for faster circulation, better mixing, more uniform beating, stronger fibre, greater output and heavier consistency?

We can help you make this improvement.

We can double the circulation and increase the capacity by at least 25 per cent of your Beaters without using any more power than you are using now. And we'll back that statement with an iron-clad guaranty.

Leo Shlick's Beater Hood can do all this on any Hollander engine in your Beater Room. It is easy to install and results are immediate.

Write and let us prove these statements at our expense.

Strong and Basic Patents Allowed

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Western Representative
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BIRD MACHINERY

4842

KIECKHEFER CONTAINER CO. TO START PLANT AT DELAIR

New Plant Includes All the Modern Improvements and Is a Model of Convenience in Every Respect—Represents an Expenditure of $1,500,000—Will Make Container Liner and Box Board Which Will Be Used in Its Own Factory for the Manufacture of Fiber Shipping Cases—Will Have Seven-Cylinder, 115-Inch Board Machine Made by Beloit Iron Works.

[FROM OUR REGULAR CORRESPONDENT.]

DELAIR, N. J., January 8, 1923.—The plant of the Kieckhefer Container Company costing $1,500,000 and consisting of a container liner and box-board mill and an immense fiber shipping case factory is virtually completed and will be placed in operation shortly.

The new plant represents the latest word in construction from the points of view of economical handling of material in and out, expeditious manufacture, and safety and well-being of its employees. It is located on a rather historic spot on the Delaware River, the twenty acres in the plant taking in the old Isaac Fish Homestead, the original building with its date stone of 1762 still standing and said to be the second oldest building thus marked in New Jersey. The Kieckhefer Company has enough appreciation of sentiment to impel it to plan for the retention of this old structure as an office building. But just a few feet away are the mammoth modern buildings, over which there lords a gigantic white concrete smokestack two hundred and twenty-five feet high, and visible from all the country round in a ten-mile radius.

Excellent Freight Facilities and Water Supply

The plant is admirably located with regards to freight facilities and water supply.

The layout of buildings which constitutes the plant extend in a parallelogram with its longest side along the Delaware River. The box plant has the Delaware River frontage. The water being only a few feet away at the base of the knoll on which the plant is situated. The box manufacturing plant has a breadth of one hundred and eighty feet and a length of four hundred and twenty feet. The beater room runs at right angles to the box plant and is separated from it by the yard way into which the Pennsylvania Railroad track will run. It is ninety by ninety-five feet in size. Immediately in the rear of the beater room on the western side is the engine room, the boiler room and the coal pits, while on the eastern side is situated the machine and Jordan building. The machine room is forty-two by three hundred and thirty-five feet in size. At the far end and running across the width of these buildings is a warehouse one hundred by four hundred and five feet now completed. A duplicate is to be erected in the future. Loading platforms extend along the entire length of the box plant.

Beloit Iron Works Paper Machine

The new paper machine just completed was built by the Beloit Iron Works. It will have a production of one hundred tons of liner paper or one hundred and twenty-five tons of chipboard with the widest cut one hundred and fifteen inches. It will consist of seven cylinders, one hundred and three dryers and three calender stocks. In the beater room are ten Noble & Wood beaters. The Jordan room houses four Noble & Wood Mammoth, Jr., Jordans.

The boilers in the boiler room consist of three six-hundred horsepower Badenhausen units, operating under two hundred pounds' pressure with steam superheated ninety degrees and will have an overload capacity of two hundred and fifty per cent of the normal rating. The boilers will be equipped with Coxe Stokers using anthracite coal. In the engine room there has been installed a Harrisburg Uniflow Variable Speed Twin cylinder engine, but all the units in the plant save the variable speed end of the paper making machine will be equipped with individual motors. The electrical equipment consists of two Allis Chalmers alternating current generators, each with a capacity of nine-hundred KVA alternating current, the engine drive being connected directly to the generators, together with two Filer & Stowell Company engines, one a 1,090 H. P. Corliss cross compound condensing and the other a Filer-Stowell 1,000 H. P. semi-uniflow.

Buildings of Brick and Steel Construction

All the buildings save the beater room are of one-story construction, the latter, however, being two stories in height. All are built of steel brick and concrete with an abundance of steel window sash permitting a flood of daylight and of ventilation to all the departments and are most thoroughly and modernly appointed with all conveniences for employees.

With the completion of this mammoth new structure at Delair, there will be dispensed with the original Kieckhefer plant to Camden, located at Thorn and Copewood streets, South Camden, which consisted of a box factory only and which was but half the size of the box factory department of the new manufacturing home. Virtually all the machinery equipment is like the building itself entirely new.

The Delair or Camden organization of the Kieckhefer Container Company is a branch of the parent concern in the West. This branch was established but three years ago and has had a continuous and remarkable growth since then. It produces fiber shipping cases exclusively in all sizes and used for the shipping of many articles of food including canned goods; also shoes, bedding and an infinite variety of other articles. The construction of the Delair plant was by the Irwin & Leighton Company, builders for the Government of Camp Dix and of the collosal Sears, Roebuck plant on the Roosevelt Boulevard in Philadelphia.

Management of New Plant

The Camden or Delair branch is under the general management of R. F. Bell, secretary of the Kieckhefer Container Company; Herbert Kieckhefer is superintendent of the box manufacturing department; L. J. Meunier is superintendent of the paper mill; G. A. Vollmer is sales manager and J. J. Ruster is traffic manager.

Thaw and Rains Aid Black River District

WATERTOWN, N. Y., January 8, 1923.—A decided relief to industrial plants in this section was felt Tuesday when the results of the thaw and rain of Sunday and Monday began to be felt in the flow of Black river. E. S. Cullings, secretary of the Board of the Black River Regulating District, said that there had been a raise in the water level to twice the conditions of the previous week, which meant 2,500 second feet greater flowage.

The result meant sufficient water for the paper mills and other plants along the lower portion of the river which had been suffering greatly and faced a crisis without it. Mr. Cullings said that the thaw and rain gave no help to the upper reaches of the river and its tributaries. The rain simply soaked into the snow in the woods and did not help river flow, but the raise in the flow in the lower portion of the river was due to rain and melting snow from the Tug Hill section.

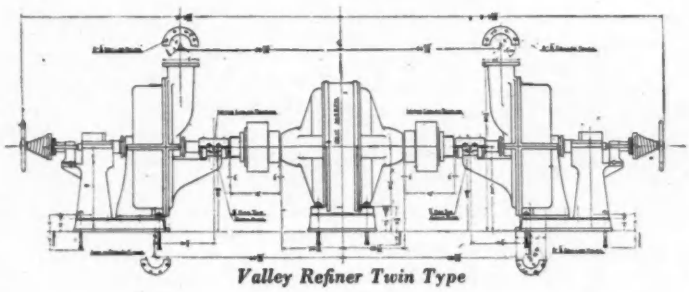
Unless further thaw ensues soon the present relief will have passed away and bad conditions returned.

Northern Pulpwood Co. Organized

[FROM OUR REGULAR CORRESPONDENT.]

AUGUSTA, Me., January 8, 1923.—The Northern Pulpwood Company has been organized at Bangor to buy, sell and deal in timberlands and pulpwood; capital stock authorized $200,000, all common; paid in $300. The officers, who are also the directors, are Michael J. Brennan of Bangor, president; Regina A. Brann, treasurer, and James B. Mountaine, all of Bangor.

Turning Grinder Rejects Into Dollars



Valley Refiner Twin Type

That is the function of the Valley Refiner. The machine is built in Single and Twin types with capacities of 3½ and 7 tons of groundwood pulp daily respectively. Not only does the Valley Refiner eliminate waste, but it turns the waste into a profitable product. The savings effected will pay for the machine in ninety days.

We will gladly furnish full details upon request.

VALLEY IRON WORKS COMPANY

Plant: APPLETON, WIS.

New York Office: 350 Madison Avenue

BUSINESS IN PHILADELPHIA STARTS WELL FOR NEW YEAR

While no Signs of a Boom are Apparent Paper Merchants Believe That Indications Certainly Point to a Considerable and Healthful Expansion in Business—Decided Increase in Inquiries from the Mills for Paper Stock Is Reported—Certificate Bond Distributors Plan Big Educational Meeting at Hotel Adelphia—New Officers of Pinco Papers, Inc.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, January 9, 1923.—Enough of the new year's actual business now has been done to justify the faith of those who in the closing days of the old year expressed their belief that there was ahead an era of good times. In the new year's business there was nothing of a suddenly appearing boom, but there was abundant evidence in the character of the buying to warrant conviction that it was sound wholesome trading and that it had lasting qualities. There did not appear as was anticipated a general upward revision of prices, although there were a few minor changes in the fine paper division and one grade of No. 1 kraft declined a quarter of a cent a pound. However, the jobbers were of opinion that this particular grade had previously been quoted too high and that the slight reduction now brings it on an equality in price with competing brands of like character. Thus far there has been no echo in prices of the scarcity of ground wood experienced by the mills and attributed solely to the scarcity of water. Visiting mill representatives have informed the trade that the ground wood shortage is becoming acute. In organizations where there are a chain of mills, it has been found necessary to transport ground wood to mills where previously it was produced, but which are located in the draught zone and which therefore were unable to produce this raw material, necessitating shipment to them and thereby of course, an increase in the cost of producing wood paper.

Salesmen from the local distributors calling on the Philadelphia and nearby printing and publishing trades reported that the stocks on hand in the printing industry was negligible and that any increase in business would result in an immediate placing of orders for paper. While the printers experienced a little lull, immediately after the rush of the holiday trade, the turn of the year brought with it quite a few orders and these constantly are growing. It is the opinion of this class of consumers that there is certainly good and probably excellent business ahead. The manufacturing stationery trade is also buying quite satisfactorily and it also is confident of a continuance of good times.

The development of the week in the paper stock trade was a very decided increase in mill inquiries generally and in the buying of common papers and particularly the comparatively new grade of container manilas by the boxboard producers.

Box Board Prices Advance

During the week boxboard prices for all grades advanced from three to five dollars a ton and the paper stock dealers were able to secure from the mill an increase of about two dollars a ton on mixed and common papers and three dollars and slightly more on the better grades and on container manilas. The paper box trade apparently had good enough business for the holidays to clean up all the stock of boards and it is now buying quite liberally for the business actually in hand and that which gives positive evidence of an early appearance. In general therefore, 1923 has started off most satisfactorily and most encouragingly and in a condition of very decided betterment over the corresponding week of a year ago.

To Hold Educational Meeting

Very early in the new year there will be held a trade function which is expected to draw to it representatives of perhaps as many as 500 converters of paper, principally printers and engravers. It will be the educational and social meeting arranged by the Croker-McElwain Company of Holyoke in a campaign to educate the trade to the fullest possibilities of usefulness and adaptability of this firm's widely known Certificate Bond. The gathering will be held at the Hotel Adelphia and will be under the auspices of the two Philadelphia distributors of Certificate Bond and of the new line of Certificate note paper, the Charles Beck Company and the Thomas W. Price Company. While all the details are still in the making, it is expected to have present two representatives of the Crocker-McElwain Company to make addresses. Charles Barr of the manufacturing company's advertising service will make an address touching on the method of production and the publicity campaign which are conducted by the organization, while William Roch is expected to give a practical demonstration of the capability of Certificate Bond, particularly in halftone work. While the affair is informal there will be provided quite an elaborate banquet preceding the business meeting. It has been set for January 15 at six-thirty o'clock.

Pinco Papers, Inc., Chose Officers

Acting under authority of its recently secured charter under the laws of New Jersey, Pinco Papers, Inc., has chosen officers and these are as follows: Thomas F. Pinder, president and treasurer, C. C. Orcut, vice-president and Henry Hoyt, secretary.

The plant of the Pinco Papers, Inc., is located in Camden, N. J., just across the river from Philadelphia and is the remodeled and expanded coating plant conducted for many years by the late E. G. Locke. The Locke interests were taken over by Thomas Pinder who for many years had charge of the coating department as superintendent of Dill & Collins, Philadelphia, and who has associated with him W. H. Wilkins, previously manager of the coated paper department of the D. L. Ward Company and subsequently with the Paper Service Company and who is intimately familiar with the paper box manufacturing trade. Since the plant was taken over, extensive additions have been made both to the building and to the machinery equipment and there shortly are to be added an additional number of reelers.

General Trade Notes

A folder announcing the stocking by the Walter, Wilcox, Furlong Paper Company, 231 Chestnut street, of Tuscan cover papers, the first offering in Philadelphia is being mailed to the trade. This new line which has a very wide field of possibilities for catalogue booklet and brochure work will be carried in ten colors and white, these being granite, scarlet, turquoise green, gray, gold, seal brown, cafe, india and dark blue in two weights 20 x 26—65 and 20 x 26—135 and in two sizes, both weights, 20 x 26 and 23 x 33. Brochure is printed on 20 x 26—65 turquoise.

President Lutz of the Invincible Paper Mills, New York, and general sales manager of the Ajax Paper Mills called on the trade during the week.

Now Drying Machine Corp. of America, Inc.

Drying Machine Corporation of America, Inc., with offices at 52 Vanderbilt avenue, New York, announces that it has succeeded the H. P. Coe Drying Machine Corporation, formerly located at 50 Church street, New York, in its business, the ownership of its patents and other assets, and, with ample capital, and additional and improved manufacturing facilities for perfect construction and prompt shipment of its mechanical dryers for veneers and thin lumber, and also for the drying of composition boards of all classes, including plaster, asbestos, insulation and binders, and pulp products of wet machines and presses.

H. P. Coe, the inventor of the original Multiple Deck Roller Drying Machine, with twenty years' experience in manufacturing drying machines of that type is president. The other officers will be announced later.

1st PAPER INDUSTRIES EXPOSITION

Week Commencing

APRIL 9th -1923

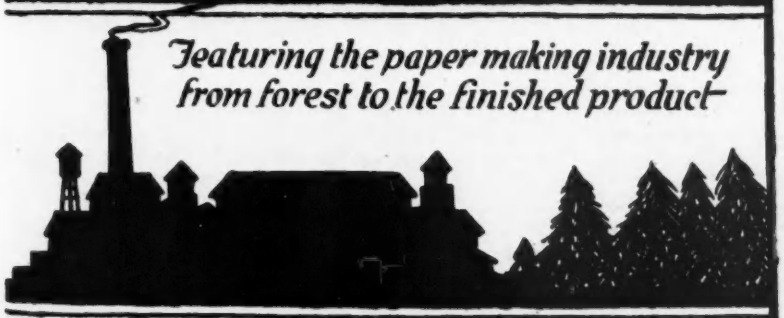
GRAND CENTRAL PALACE

NEW YORK CITY

Management

INTERNATIONAL EXPOSITION CO.~

Featuring the paper making industry from forest to the finished product



For floor diagram and complete information about exhibit space—address

PAPER INDUSTRIES EXPOSITION

Grand Central Palace

New York City

PAPER MERCHANTS IN BOSTON OPTIMISTIC OVER OUTLOOK

Last Half of 1922 Showed Exceptional Improvement Over First Six Months of the Year and the Improvement Is Expected to Continue in 1923—Prices are Unchanged and Show a Tendency to Stiffen—Printers are Busy and are Sending in Numerous Orders for Paper to be Shipped Immediately—A. C. Hall, of John Carter & Co., Injured by Fall—General News of the Boston Paper Trade.

[FROM OUR REGULAR CORRESPONDENT.]

BOSTON, Mass., January 8, 1923.—Boston paper merchants are decidedly optimistic regarding the outlook for them during the new year. They also report that the last half of 1922 showed exceptional improvement over the first half of the year, and that the volume of business for the last half of the year was up to the pre-war record. As one prominent merchant put it, 1923 will be a much better year "because we are going after the business and we are going to get it."

According to many of the Hub paper merchants the hand to hand policy in buying has proved rather unsatisfactory for the customers because of the embargoes on the railroads and the many difficulties attendant to getting shipments through on a moment's notice. Many of the Hub merchants are complaining over the seeming impossibility to get goods through.

Prices on the Boston market do not show any weakening this week. On the other hand they show a tendency to stiffen up and it is not expected that there will be a break for some time to come. While it is expected that there will be a slight rise in the lower grades of both bonds and other grades of paper it is not expected that the rise will be at all large.

Printers Reported Busy

Printers in Greater Boston and other New England sections report that they are receiving orders for all of the work they can turn out, and as a consequence the paper men are receiving orders for supplies to be shipped immediately. Present conditions are leading the printers and others to lay in supplies of paper ahead of time.

General News of the Trade

A. C. Hall, manager and treasurer of John Carter & Co., paper merchants on Atlantic avenue, fell a short time ago and was badly shaken up in addition to injuring his right shoulder. He fell over a loaded truck which had been left in the passageway in the stock-room. He is slowly recovering and is able to be at the office practically every day.

John Carter & Co. have put in a new line of bond paper, Waterfalls Bond, made in white and nine colors selling from 13½ cents to 16½ cents a pound by the ream. Waterfalls ruled goods and Waterfalls Bond envelopes are also carried by the Carter firm now at both warehouses, Boston and Providence, R. I. Cheaper prices on the new bond are quoted on case and ton lots.

Mr. White, sales manager for Crane & Co. was in Boston last week visiting the various firms carrying the Crane lines. A composite picture of all of the twenty-six mills of the American Writing Paper Company is shortly to be placed on the wall of the sales-room of John Carter & Co. C. S. Hall, manager of the envelope department of the Carter firm reports one of the most successful years in his experience and he is an old timer in the firm, having been connected with them for more than a quarter of a century.

William H. "Billie" Hilton of Worcester, one of the heads of the United States Envelope Company in that city, was in town this week visiting his many friends. He is retiring as monarch of the Worcester Aletheia Grotto (A. F. & A. M.).

Max Frank, one of the older members of John Carter & Co. firm has recently been confined to his home, recovering from an operation. He is able to be at his desk every day now for at least part of the day. He was confined to his home for nearly four weeks.

A. Storrs & Bement Company reports that the holiday season for the announcement department was an exceptionally good one and continued so right up to the first of the year. The firm is sending out this week calendar pads to its many friends and customers. These have proved very popular during the last two years. New customers are receiving the whole outfit while old customers are receiving refill pads and paper.

Wayagamack Co. Presents Good Report

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., January 8, 1923.—The annual report of the Wayagamack Pulp and Paper Company, Limited, for the year ending November 30, 1922, was issued this week. It affords another indication of the steady improvement that has occurred in the past year in the kraft paper industry. Just how quickly the industry has revived will be judged from the fact that it was possible for the company to keep all of its plants working to full capacity throughout the year and at the same time greatly widen the market for its products in outside countries. This will have a very stabilizing effect on the industry, as in addition to the large business done at home Canada, it will mean that a very considerable portion of the total output will be finding its way all the time to many outside centres. As a result of the more favorable conditions the Wayagamack Company was able to report profits for the year of $372,030 as against a loss in the previous year of $156,712. Against this the only actual cash disbursement was represented by the payment of bond interest amounting to $260,854.

The general statement of assets and liabilities also reflects the improvement that has occurred. Current assets amount to $2,455,150 as against current liabilities of $1,070,444 leaving a working capital of $1,364,706. In the inventories pulpwood, logs and lumber stand at $879,205 compared with $2,151,297 at the end of the previous year.

This would seem to indicate that all surplus amounts of pulpwood and lumber have been used in meeting the increased requirements of the company's customers.

The principal items included in current liabilities are accounts payable $354,465 down from $449,872 bills payable $199,369 compared with $191,629; and bank loans secured $425,000, down from $1,998,000. In addition notes, which were outstanding to the amount of $300,000 on account of new limits, have been paid off. This has completed all payments on account of additional limits secured and now the company holds outright 2,056 square miles of timber limits. The company has now built up a reserve for depreciation and sinking fund of $1,621,920, as against $1,438,874. The appropriation for the year was $160,000. It is to be noted that this sum has been maintained through the less active periods, as well as during the successful years. In addition, there is a general reserve of $1,000,000.

C. R. Whitehead, the president, in his report, states that in view of the disturbed financial conditions of the world, the directors felt it would be some time before their export markets would give a normal return and accordingly operated their plants with the strictest economy.

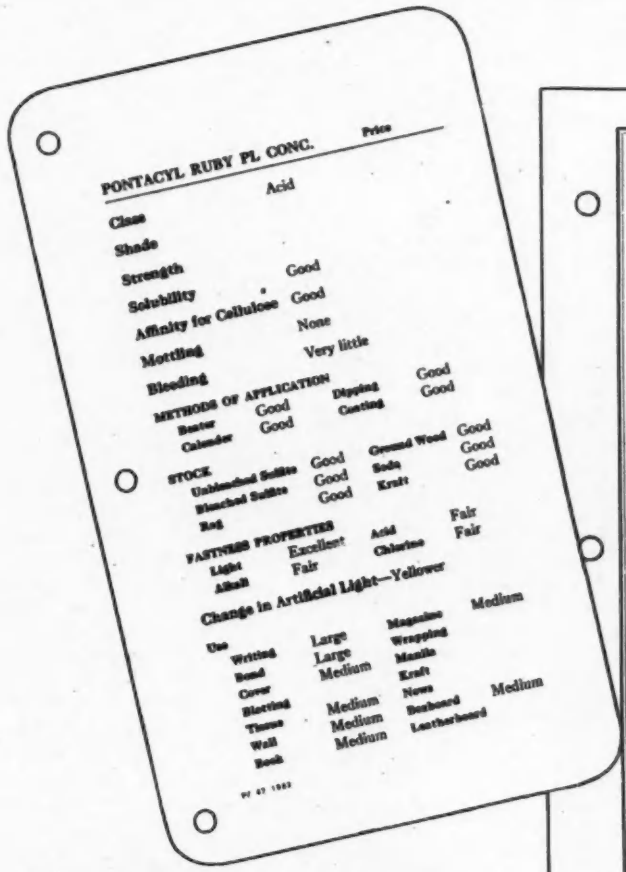
United Paper Board Co. Profits

The United Paper Board Company for the six months ending November 25 last reports net profit of $121,149 after expenses and taxes in contrast with net loss of $96,116 for the corresponding period of 1921.

Profits before deduction of expenses and taxes amounted to $223,612 compared with a loss of $906 in the same period of the preceding year.

DUPONT

Technical Service to Dyestuffs Users



PONTACYL RUBY PL CONC. Price

Acid

Class

Shade

Strength

Solubility Good

Affinity for Cellulose Good

Mottling None

Bleeding Very little

METHODS OF APPLICATION

Beater Good Dipping Good

Calender Good Coating Good

STOCK

Unbleached Sulfite Good Ground Wood Good

Bleached Sulfite Good Soda Good

Rag Good Kraft Good

FASTNESS PROPERTIES

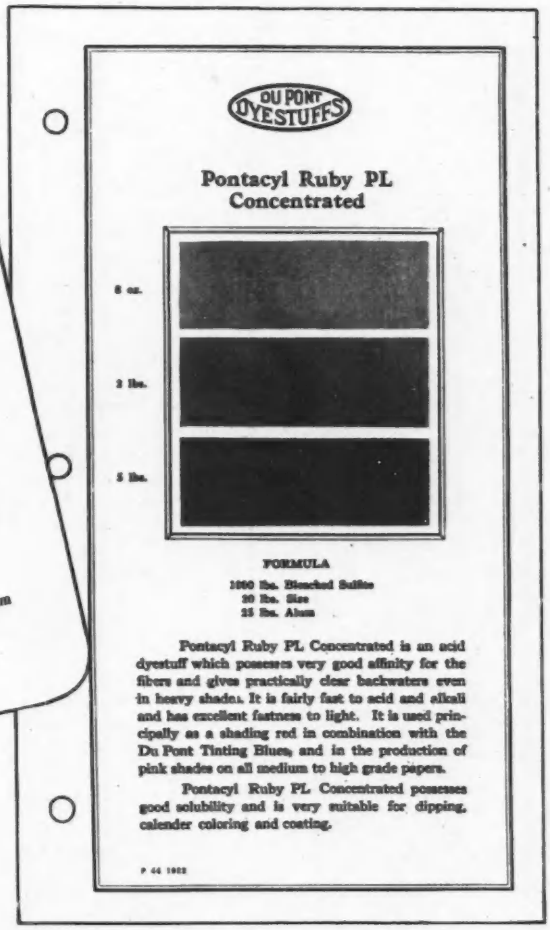
Light Excellent Acid Fair

Alkali Fair Chlorine Fair

Change in Artificial Light—Yellower

Use			
Writing	Large	Magazine	Medium
Bond	Large	Wrapping	
Cover	Medium	Manila	
Blotting		Kraft	
Tissue	Medium	News	
Wall	Medium	Boxboard	Medium
Book	Medium	Leatherboard	

P 47 1922



DU PONT DYESTUFFS

Pontacyl Ruby PL Concentrated

8 oz.

2 lbs.

5 lbs.

FORMULA

1000 lbs. Bleached Sulfite
20 lbs. Size
25 lbs. Alum

Pontacyl Ruby PL Concentrated is an acid dyestuff which possesses very good affinity for the fibers and gives practically clear backwaters even in heavy shades. It is fairly fast to acid and alkali and has excellent fastness to light. It is used principally as a shading red in combination with the Du Pont Tinting Blues, and in the production of pink shades on all medium to high grade papers.

Pontacyl Ruby PL Concentrated possesses good solubility and is very suitable for dipping, calender coloring and coating.

P 44 1922

Dyestuff Bulletins similar to the above are available for every du Pont dyestuff. They cover thoroughly the properties of the dye and instructions for its use. Write us for those covering colors in which you are interested.

E. I. DU PONT DE NEMOURS & CO., Inc.

WILMINGTON, DELAWARE

LOOK FOR INCREASED VALUES IN KALAMAZOO PAPER STOCKS

While Losses Have Been Considerable in the Past Six Months They Have Been More Theoretical Than Active and With the Healthy Revival in Business Which Is Indicated These Paper Losses Should Be Wiped Out in the Next Few Months—Late Hale P. Kauffer, Chairman of Board of Bryant Paper Co., Leaves Estate of $594,182.92—Monroe Paper Co. to Erect Buildings.

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., January 10, 1923.—Holders of active stocks in local concerns are looking forward to 1923 with the hope that the year will be one of revival in values, thus making good the losses that have been sustained during the past 12 months. This is particularly true of most of the paper stocks, which have slumped considerably.

During 1920 when the New York stock market was showing record low levels, local paper securities held pretty strong. It was not until the slump in the business became generally apparent that the local market began to fall off. The result is that within the past six months particularly paper losses have been considerable.

According to Leo H. Swiat, of the Olmsted & Mulhall stock and bond department, the past year has been an era of bond buying almost exclusively. Stocks have offered little attraction to local buyers. This has naturally tended to a slump along the line, the drop ranging from ½ a point to 5½ points on the various issues affected.

The losses have been more theoretical than actual, for holders of securities have been sitting tight, refusing to dispose of their holdings unless able to get close to former market quotations. Trading has been limited to a total of a few thousand shares at the most. With a very healthy revival in business indicated, these paper losses should be wiped out in the next few months.

One factor that cannot be overlooked is the sympathetic effect of the forced reorganization of the Eddy Paper company and the formation of its successor, the Eddy Paper Corporation of Illinois. By this move 700,000 shares of $10 common stock and 175,000 shares of $10 preferred stock are to be exchanged for 31,250 shares of no par value stock in the new Illinois company. The most optimistic figuring cannot give a return of over seven to eight cents on the dollar, at least for the time being. All classes of buyers were hit hard by this debacle.

Comparative Stock Sheet

The comparative local market quotations for Dec. 30 and January 1, 1922, according to the Olmsted & Mulhall stock sheets follows:

	Dec. 30, 1922		Jan. 1, 1922	
	Bid	Asked	Bid	Asked
Bryant	12	12½	17½	18
K. V. P.	9½	10	12¾	13¼
Allied, com.	2⅜	2⅝	3	3½
Allied, pfd.	7½	8	8	8½
Sutherland	9	10	9¼	9¾
Rex	15	17	17½	18
MacSimBar	5	7	6½	7
Kal. L.L.B.	11½	12¼	13	13½
Kalamazoo	17½	18½	20	21
West. Bd.	15	....	12¾	13¼
Hawthorne	8	9	9¼	9¾
Watervleit	16¾	17¼	20	21
*Standard	12	15	25	28
Lee units	115	125	115	125
Michigan	15¾	16¼	17	17½

*Ex-dividend.

M. B. King to Vote Stock of Late J. F. King

Letters of trusteeship were issued Saturday by John L. Hollander, judge of the probate court, granting to Merrill B. King, president of the Rex Paper company, authority to vote the stock of the late John F. King, who died last spring, leaving an estate, valued at $220,000, including 14,780 shares of stock in the Rex Paper company, inventoried at $177,360.

M. B. King is empowered by letters issued to vote the stock of the J. F. King estate, at the annual meeting of the Rex Paper company, which will be held, Tuesday, January 16. In compliance with the provisions of the authority granted, M. B. King has filed a surety bond of $250,000 to carry out the provisions of the will.

According to the will of the late John F. King, Merrill B. King and Dorothy Kraemer were named as trustees. Of the 14,780 shares of Rex Paper stock, 4,200 shares were set aside for Alice B. King, widow of the deceased, and the balance, 10,580 shares, was divided equally between the son and daughter, Merrill B. and Dorothy. The dividends are to be disbursed as the stock is held.

Estate of Late Hale P. Kauffer

An estate of $594,182.92 was left by the late Hale P. Kauffer, chairman of the board of the Bryant Paper company, according to the inventory just filed with the probate court. It was mostly in stocks and bonds. The chief stock items list are: 20,000 shares of Bryant Paper common, valued at $275,000; 3,422½ shares preferred stock Bryant Paper, $34,977; Kalamazoo Vegetable Parchment common, 5,165 shares, $51,630; Kalamazoo Railway Supply company, 2,000 shares, $27,000; Ampco Twist Drill & Tool company, 1,500 shares, $15,000. Bonds listed: Fuller & Sons Manufacturing company, $15,434.58; Kalamazoo Sanitary Manufacturing company, $9,800; Superior Printing company, $5,000; Wilson & company, $1,980; Kalamazoo Motors corporation, $950; State of Michigan soldiers' bonus, $10,095.56; United States certificates of indebtedness, $25,470.

Monroe Paper Co. to Erect Buildings

President Leonard Mitchell, of the Monroe Paper company, is authority for the announcement that the erection of several buildings will be undertaken in the immediate future. They will be of factory construction type, frame and concrete blocks and one story high. They include an engine room, machine room, beater room and offices. In addition there will be a considerable purchase of mill equipment and machinery and office furnishings. A large portion of this plant was destroyed by fire in December, entailing a loss of over $50,000.

General Trade Notes

The Monroe Binder Board and Consolidated Paper companies of Monroe, are made defendants in a suit for $10,000 filed by Alton Brancheau, of that city. He declares that while operating a scoring press, October 3, 1917, his left hand was caught and crushed.

It is announced that the Consolidated Paper company, River Raisin Paper company and the Monroe Paper Products company, all of Monroe, have arranged their working conditions for 1923, adopting a plan of five working days each week and an advance of 10 per cent in wages. This schedule affects 3,500 employees.

To Act on Forestry Referendum

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 9, 1923.—The question as to whether or not a referendum will be taken by the United States Chamber of Commerce on the forestry question will be put up to the Board of Directors of the National Chamber at their next meeting, which is to be held in Washington on February 7 and 8. Officials of the chamber refuse to discuss the forestry question further than to state that Charles S. Keith, the prominent Southern lumberman, who is a member of the board, has submitted a minority report which has been signed by several members of the forestry committee.

Growing Two Blades of Grass in Place of One

Hours of Operating Profit may be added by the Patented Removable Fourdrinier which eliminates the Removal of rolls, savealls and suction boxes when Changing Wires

BELOIT IRON WORKS

BELOIT, WISCONSIN

PAPER MERCHANTS IN TORONTO LOOK FORWARD TO GOOD YEAR

While Trade Has Not Gathered Any Great Momentum As Yet It Is Expected That It Will Show a Satisfactory Expansion Soon—Reports of Many Building Extensions Among the Mills Seem to Indicate That the Year Will Be a Very Active One—Increasing Scarcity of Ground Wood Influences Additional Stiffening in Price—Ontario Mills Making Important Improvements.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ont., January 8, 1923.—The jobbers have finished their inventories and this week salesmen started out on their rounds for the coming year. It is too early yet to speak authoritatively on general conditions and it is not anticipated there will be any great movement until nearer the end of the month. There is a splendid feeling existing in all the ranks of the paper trade and this is shown on every hand as reports come in steadily regarding extensions that will be made by mills during the coming year. This month nearly all local firms will hold their annual meetings and the statements presented will reveal considerable improvement over last year. Newsprint continues very active and book and writing mills are getting busier after a quiet three or four weeks. Some nice contracts have been secured for the next few months.

The demand for waste paper of all grades is very good and the requisitions for new cotton cuttings are firm while prices hold up well. Mills have held off buying until the end of the year but it is now expected that they will be in the market again. There are no changes in prices to report with the exception that there have been some slight readjustments on wall board and there is an advance of about three quarters of a cent on tag manila, which amounts to an increase of about twenty per cent on the average.

Ground Wood Pulp is Scarce

There is still considerable scarcity of ground wood pulp reported by some of the mills owing to low water and the price has been stiffening all the while. Various figures are heard from $35.00 up. The Foley-Reiger plant at Thorold, which a couple of years ago was acquired by the Beaver Companies and has been idle for a long time, has again been put in operation and is now running to capacity. The production of several mills is away below normal owing to poor water conditions.

Denies There is Any Merger

During the past few days there has been revived an old rumor that the Spanish River Pulp and Paper Mills, Ltd., and the Abitibi Power and Paper Company, of Iroquois Falls, Ont., would merge their interests. Col. Thomas Gibson, of Toronto, who is vice president of the former company, states that he knows nothing about the report, which seems to be an old one that crops up every now and then. The Spanish River Company is now turning out about 670 tons of news-print a day at its three plants and the Abitibi Company about 500 tons a day. One machine of the Fort William Paper Company, Fort William, turned out its first news print last week and will soon be in regular operation. T. G. Calvert is the superintendent of the new mill and comes highly recommended.

Taking Out Much Pulpwood for Export

A Canadian subsidiary company of the Hammermill Paper Company, of Erie, Pa., last year bought in the Thunder Bay district around Port Arthur, Ont., and exported from the head of the lakes some forty-five thousand cords of pulp wood. During the present season, it is expected that this company will take out about seventy thousand cords and, in so doing, will expend a million dollars. To carry out this enterprise there will be employed some 500 horses and 1,500 men. For exportation purposes ten vessels are kept busy during the summer. Twenty-five per cent of the wood exported is purchased direct from settlers on timbered land. Over seven million dollars have been expended during the last four years in pulp and paper plants directly tributary to Port Arthur and Fort William and 470 tons of finished product will be the daily output during the coming year.

Tribute to Late Alex Buntin

At a recent meeting of the Toronto members of the Canadian Paper Trade Association, a resolution of sympathy was passed relating to the esteem and respect in which the late Alex Buntin, head of Buntin, Reid Company, was held and a copy will be forwarded to his wife and family. The book and writing section of the Canadian Pulp and Paper Association also held a meeting lately and passed a resolution of condolence.

New Logging Railway Completed

The new logging railway, which is sixteen miles long, has been completed by the Abitibi Power and Paper Company, of Iroquois Falls, Ont., the last spike being driven last week. The road taps a well wooded district and over it will be brought each winter a large quantity of the pulp wood required for the mills. The company is taking out a huge quantity of wood this season and has a vast army of men employed in the bush.

Several Mills Making Improvements

Mills all over Ontario are getting ready for an increased output. The Don Valley Paper Company, of Toronto, has just completed the installation of a pulp conveyor for carrying pulp from the cars to the storage room. The Belleville Paper Company, of Belleville, Ont., which makes straw board for corrugated purposes, has installed new steam boilers and made other alterations which will increase the capacity of the plant. The Specialty Paper Company, of Camden East, Ont., is now making use of a new de-inking process and will soon put on the market high grades of book and writing papers. The present output of the company's plant is about twelve tons daily.

Development of Publishing Business

According to statistics, recently issued by the federal government, Canada has now over one thousand daily weekly and monthly publications, of which over four hundred are owned and printed in Ontario. The number of daily papers with morning editions in Canada is thirty-six, with evening editions eighty-six, and with Sunday editions, five. The number of persons employed in the newspaper field is nearly sixteen thousand. The consumption of newsprint is considerably over one hundred thousand tons and is growing rapidly owing to the constantly increasing size of the daily publications.

News and Personals of the Industry

W. M. Oulster, for the past four years with the Southam Press, Ltd., Toronto, has joined the city sales staff of the Rudd Paper Box Company, Toronto.

A. P. Costigane, secretary and safety engineer of the Ontario Pulp and Paper Makers' Safety Association, Toronto, has issued his 1923 Safety Calendar, which is having a large call from the mills. It is well illustrated and intended to drive home many truths in the interest of safety.

A. H. Paffard, of Toronto, has entered upon his new duties as manager of the Toronto warehouse of the E. B. Eddy Company, of Hull, Que. J. F. Taylor, of Hull, sales manager of the company, was in Toronto last week on business.

Now Lasher & Gleason, Inc.

[FROM OUR REGULAR CORRESPONDENT.]

BRIDGEPORT, Conn., January 8.—The Gorton Paper Company of Bridgeport changed its name to Lasher & Gleason, Inc.

EXACT MICROMETER

Actual Size

Height 6¼ in.

Diam. Dial 5¼ in.

Depth of throat 3⅝ in.

Bevel Plate Glass

Nickel finish top

Black enamel base

The Exact Micrometer is automatic in its action, and as its name implies, Exact, in recording the thickness, because it is built on the only correct principle. There are no Pinions, no Levers, no Gears of any kind used for transferring the action of the Plunger to the reading Indicator. The Indicator hand is firmly attached to and becomes a part of the measuring Plunger, hence, accuracy.

It contemplates .300, registers .100 around the dial, repeating three times (trip indicator). The graduations are three times as far apart as on any of our previous Micrometers or as on the German Micrometer, hence, are more easily read.

"For Automatic Weighing Scales for giving the weight of 480 sheets or 500 sheets of paper or for ascertaining the weight per M Sq. Ft. of box boards write to us for full description and price."

Write for Life Size Circular

E. J. CADY & COMPANY, 326 West Madison Street, Chicago

These instruments are carried in stock by C. B. Hewitt & Bros., 16-24 Ferry Street, New York

NEW ENGLAND SALESMEN HEAR REPRESENTATIVE PAPER MEN

Meeting of the New England Section of the Salesmen's Association at the Colony Club, Springfield, Mass., on Friday Evening of Last Week Is Addressed on Interesting Subjects by Numerous Well Known Speakers in the Paper Business—Gathering Is Unexpectedly Large and Points to Increasing Interest in the Work of the Association—Those Who Were Present.

[FROM OUR REGULAR CORRESPONDENT]

SPRINGFIELD, Mass., January 6, 1923.—Last evening at the Colony Club, was ushered in the first of the rallies of the Nineteen "Plenty" Three meetings of the New England section of the Salesmen's Association of the Paper Industry. The pace set by the large attendance at the meeting augurs well for the future meetings to be held during the year. As the hour for the dinner approached it was observed that the committee of arrangements were in a quandary as to whether they would be able to provide for the unexpected arrivals, as the returned acknowledgments of the invitation did not indicate there would be present over half the number of the sixty who sat down to dinner. However, the situation proved the resourcefulness of the salesmen's committee, and it was a compact, congenial gathering which occupied the dining hall of the club, the former mansion of Mr. Wesson, one of the founders of the Smith & Wesson Arms Company of Springfield.

F. W. Main Presides as Toastmaster

Prior to the dinner, time was spent inspecting the club house, which is noted for its interior decorations, tapestries and paintings. John E. A. Hussey, Walter E. Perry, Henry E. Linquist and F. W. Main, who comprised the committee of arrangements, provided a program of speakers who kept their audience inspired during the evening with their remininiscences of their early experiences as salesmen. As committee chairman, Mr. Hussey introduced Mr. Main as toastmaster, and the latter after expressing appreciation for the large attendance introduced Rev. John M. McGann of Springfield, who related his early desires to enter the business world, and in a humorous strain told of his experiences as he progressed from the position of office boy to that of an expert in the woolen business. From this he entered the ministry and stated he was still a salesman, selling religion.

Remarks by W. J. Raybold

Walter J. Raybold, president of the American Paper and Pulp Association, introduced as a "brother salesman still in the harness," spoke on the evolution of selling which has taken place in the paper industry. He stated there were three periods which showed the changes that had taken place since he first entered the industry as office man in the Agawam Paper Company. The first was the original method when men took a trunk of samples and sold goods at any price obtainable. Then came the period of the salesman with the brief case filled with samples, selling private brands with ruinous competition, and then the present day when salesmen carried few if any samples in his pockets and was selling mill brands, service and the house he represented. He emphasized the expense of present day selling methods and mentioned the fact that many fortunes were made in the original days. Stressing the point that religion and business could well mix he added that the paper industry could be placed on an even higher plane than it enjoyed today if all "played the game square."

C. E. Crocker Speaks

C. E. Crocker, of the Crocker-McElwain Company, spoke of the value of get-together meetings in all branches of the industry and heartily favored all associations where it was possible for men to exchange ideas. He said the individuals obtained from their association work just what they put into it. Reflecting on the transition which has taken place in the paper industry, he prophesied that other changes would take place as time progressed, just what they would be he could not tell and wished he could as he would get busy now and beat the others to it.

S. L. Willson Classifies Salesmen

S. L. Wilson, the newly elected vice-president and general manager of the American Writing Paper Company, stated that in his new environment he was returning to the scenes of his early days in the paper industry, and felt perfectly at home among those present. Everyone was on the *qui vive* as to what his expressed attitude would be on the mill brand situation, but his chief talk was on his classification of a salesman gauged on his recent years' experience as a buyer. He graded paper salesmen, from his knowledge of them, in paper terms such as Antique, Fine, Superfine, and Loft Dried. The Antique was the type long passed out, the Fine was the fellow of personality who could read character, fulfilled his promises and balanced the interests of his employer with those of the customer, the Superfine was the wise fellow who rushes to the command of a situation and soon fades out of the picture, and the Loft Dried the one who sleeps until ten in the morning and felt bored for the rest of the day. As to the mill brand feature he stated his present views were in accord with the policy of his present organization though there still remained many strongly inclined to private brands and his mission would be to convert them to the present methods of standardization.

J. L. Fearing Favors Weekly Lunches

J. L. Fearing of the Chicago office of the International Paper Company, called attention to the benefit which salesmen in his section have derived from their weekly lunch hour meetings, where it has been possible to assist the younger salesmen just entering the industry in overcoming many rough spots in their visitations. He believed it the duty of the more experienced men to educate the newer men in the many ramifications which enter into the selling of paper and stated the get-together weekly meetings were accomplishing much in this direction. He strongly advocated the establishing of a certain day every week in each large city where salesmen could gather at lunch and visiting salesmen would be certain of meeting the local men and others.

Dr. Baker Tells About Scandinavia

Mr. Main, before introducing Dr. Baker, secretary of the American Paper and Pulp Association, humorously referred to the latter having prepared a speech for the Chicago meeting which he had not delivered. Dr. Baker, speaking on the foreign paper situation, referred to his recent visit abroad, and said, "The manner in which Scandinavian paper mills specialize on quality, to meet particular requirements of their export trade, is a most notable characteristic of the paper industry in northern Europe.

"This unwillingness to make up their product to meet the special wishes of their customers in various parts of the country might serve as a valuable lesson to our American manufacturers, for we must gain an export trade of considerable volume if we are to have the prosperity to which this great American industry is entitled.

"Export trade can be the balance wheel to stabilize the paper industry of the United States and the difference between our methods and those of Scandinavia struck me most forcibly when I spent two months of last summer visiting the mills in Sweden, Finland and Norway.

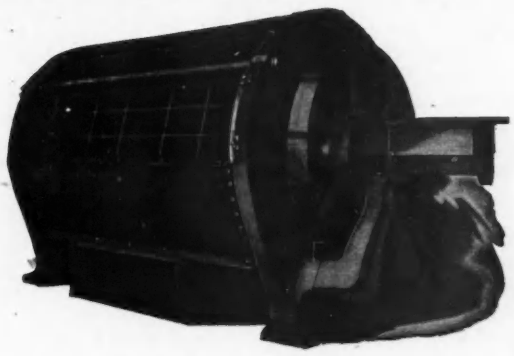
"The Scandinavians, forced by the stern necessity of wresting a living from the bleak north country, have come to recognize quality as the first consideration in their manufacture, and this is particularly noticeable in paper. In America we think in terms of quantity production, but the Scandinavian pulp has won its place in the world by its high quality. Scandinavian technical men study Amer-

(*Continued on page* 34)

"IMPCO" TAILING SCREENER

FOR SCREENING GROUND WOOD TAILINGS

Very Low Power and Upkeep Expense



Delivers Rejections Free from Good Stock

ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING

WRITE FOR FULL DETAILS *CORRESPONDENCE A PLEASURE*

IMPROVED PAPER MACHINERY CO. **Nashua, N. H.**

SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA

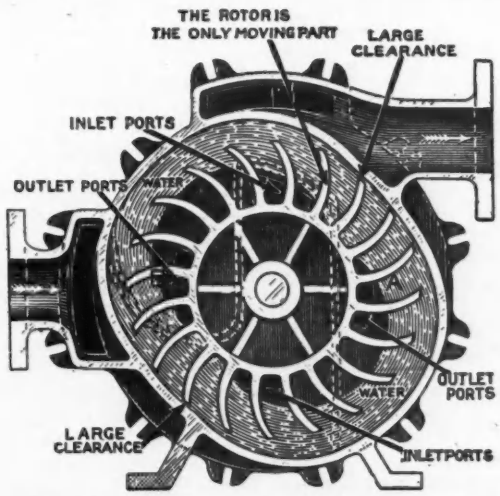
THE HYTOR VACUUM PUMP

FOR FLAT BOX SERVICE

Vacuum Produced Absolutely Without Pulsation

No Vibration

Saves Wires



Only One Moving Part

No Rods, Pistons, Crank Shafts Loose Moving Parts and No Gears

No Expert Attendance

Western Representative
T. H. SAVERY, Jr.
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THE NASH ENGINEERING CO.
WILSON POINT ROAD
SOUTH NORWALK, CONN.

New England Representative
G. H. GLEASON
185 Devonshire Street Boston, Mass.

Recent Incorporations

LINETT PAPER CUTTER COMPANY, Manhattan, New York. Capital, $5,000. Incorporators: N. and J. Linetzky, D. Linett. Attorney, H. Lieb, 58 Ludlow street.

MCKENNEY WILLAIMS CORPORATION, Brooklyn, New York. Corrugated paper boxes; 2,500 preferred stock, $20 each; 2,500 common stock, no par value; active capital, $5,000. Incorporators: J. F. McKenney, F. H. Williams, H. Heyman. Attorney, N. D. Shapiro, 50 Court street, Brooklyn.

H. FISHMAN PAPER COMPANY, Bronx, New York. Capital, $50,000. Incorporators: H. Fishman, A. and A. Werner. Attorney, J. Klein, 152 West Forty-second street.

COMMERCIAL DEVICES COMPANY, Wilmington, Delaware. Gummed labels. Capital, $500,000. Corporation Registration Company.

STUYVESANT PULP AND PAPER COMPANY, Manhattan, New York. $20,000; Incorporators, W. Braunstein, C. Reiss, L. Himmelfarb. Attorney, H. G. Marks, 63 Park Row.

SIMON MARKOWITZ PAPER BOX CORPORATION, Manhattan, New York. Capital $15,000; Incorporators, H. F. Simon, S. Mabrowitz, G. C. Woolf. Attorney, J. L. Bernstein, 5 Beekman street.

FRED D. MORGAN COMPANY, Rochester, New York, make paper and twines, 100 shares common stock, no par value; active capital, $10,000; Incorporators, F. D. and C. A. and H. S. Morgan. Attorneys, Sutherland & Dwyer, Rochester.

SOREL TERMINAL CO., Albany, make paper, 2,000 shares preferred stock, $100 each, 3,000 common, no par value, active capital, $10,000; Incorporators, J. A. Dix, J. A. O'Connor, O. J. Klein. Attorney, W. T. Byrne, Albany.

CAPITAL INCREASES

AMERICAN PAPER MILLS CORP., Manhattan, New York, $100,000 to $125,000.

LOUISVILLE PAPER COMPANY, Louisville, Kentucky, $250,000 to $750,000.

NASHVILLE PAPER STOCK COMPANY, Nashville, Tennessee, $5,000 to $50,000.

UNIVERSAL CREPE AND TISSUE MILLS, Manhattan, New York, $30,000 to $50,000.

NEW ENGLAND SALESMEN MEET

(*Continued from page* 32)

ican mills and methods far more intensively than we study their practices. They have to do this, perhaps, to compensate for the lower standards of their common labor.

"Scandinavian pulp has won such a high place by its quality, together with its cheapness of production that some of our American mills have actually been closed because of foreign competition, which they are unable to meet successfully."

Mr. McLaurin Asks Executives' Support

J. Donald McLaurin, vice-president of the New York division of the Salesmen's Association, made a strong appeal for the support of the chief executives of the industry, stating that their co-operation would benefit the entire industry. He further urged that the heads of the mill organizations make occasional calls on their customers, with their salesman, as he argued the effect of a personal visit from the mill head would have a magical effect on the customer and create a more favorable impression of the company on future calls by the salesman.

Mr. Galliver Urges Cooperation

President George A. Galliver, of the American Writing Paper Company, made his appearance at this juncture, and was called upon by Mr. Main for a talk. Mr. Galiver voiced a high opinion of association work and its value to any industry. He mentioned the educational work his company has planned to carry out for the next two years in the interest of distributors and customers, by which the entire industry would be benefited. He urged upon all the necessity for whole-hearted co-operation and the elimination of criticism which could be only of a destructive character.

Philip T. Dodge, president of the International Paper Company, who had intended to be one of the speakers, sent a telegram advising that an unexpected important business matter prevented his being present, and a similar telegram was received from George Gibson of Chicago, former president of the National Association. Walter E. Perry, an absent member of the Committee on Arrangements, being in Chicago on a business mission, was sent the following telegram: "Why don't you stay home when you expect company? Sixty members send you their greetings."

Those Who Attended

Among those present were:

W. J. Raybold, B. D. Rising Paper Company, Housatonic; Rev. John McGowan, Springfield; A. D. Coffin, C. H. Dexter & Sons, Windsor Locks; C. A. Crocker, Crocker-McElwain Company, Holyoke; S. L. Willson, American Writing Paper Company, Holyoke; George A. Gallivar, American Writing Paper Company, Holyoke; Edgar S. Bliss, Worthy Paper Company, Mittineague; G. Frank Merriam, Holyoke Card and Paper Company, Springfield; E. H. Naylor, Writing Paper Manufacturers Association, New York City; A. A. Tanyane, PAPER TRADE JOURNAL; John Cornell, L. A. Walden, H. L. Treadwell; H. H. Reynolds, B. D. Rising Paper Company, Housatonic; J. L. Fearing, International Paper Company, Chicago; J. D. MacLaurin, Liberty Paper Company, New York City; John E. A. Hussey, International Paper Company, Boston; H. E. Lindquist Chemical Paper Manufacturing Company, Holyoke; Charles K. Wadham, Z. & W. M. Crane, Dalton; W. D. Thompson, American Writing Paper Company, Holyoke; F. W. Main, Worthy Paper Company, Mittineague; Hugh P. Baker, American Paper and Pulp, New York City; H. A. Casey, Chemical Paper Manufacturing Company, Holyoke; M. E. Whitcomb, Chemical Paper Manufacuring Company, Holyoke; L. R. Coppage, Chemical Paper Manufacuring Company, Holyoke; A. P. Janes, American Writing Paper Company, Holyoke; W. J. Norton, American Writing Paper Company, Holyoke; H. M. Grasselt, American Writing Paper Company, Holyoke; R. G. Hall, American Writing Paper Company, Holyoke; C. H. Barr, Crocker-McElwain Company, Holyoke; Arthur L. Janes, Holyoke Card and Paper Company, Springfield; J. C. De Costa, American Writing Paper Company, Holyoke; F. H. Sturtevant, American Writing Paper Company, Holyoke; G. M. Holburn, American Writing Paper Company, Holyoke; George A. Davidson, Howard Smith Paper Mills, Ltd., Toronto; T. W. Harrington, Crocker-McElwain Company, Holyoke; Thomas Compton Walsh, Hollingsworth & Vose Company, Boston; Kenneth R. Bunce, Chemical Paper Manufacturing Company, Holyoke; Dexter D. Coffin, C. H. Dexter & Sons, Windsor Locks (guest of Mr. Coye); P. Schuyler Church, G. H. Mead Company, Dayton; H. A. Wingate, C. H. Dexter & Sons, Windsor Locks; Gordon Blanchard, Crocker-McElwain Company, Holyoke; G. T. Standbridge, International Paper Company, Boston; Edward E. Ezold, Chemical Paper Manufacturing Company, Holyoke; Spencer M. Holden, Crocker-McElwain Company, Holyoke; Edward H. Bush, Crane & Co., Dalton; Charles H. Coye, C. H. Dexter & Sons, Windsor Locks; John A. Snyder, American Writing Paper Company, Holyoke; J. B. Thayer, United States Envelope Company, Springfield; F. T. Burkhardt, Parsons Paper Company, Holyoke; Carl E. Lincoln, American Writing Paper Company, Holyoke; H. M. Goodman, American Writing Paper Company, Holyoke; Roger B. Taft, Hammermill Paper Company, New York City; Philip W. Gridley, Crocker-McElwain Company, Holyoke; Henry F. Savage, International Paper Company, Boston; I. N. Esleeck, Esleeck Manufacturing Company, Turners Falls; Don. Weston, Byron Western Company, Dalton; L. E. Maglathlin, Strathmore Paper Company, Mittineague; E. V. Johnson, P. R. K. & Co.

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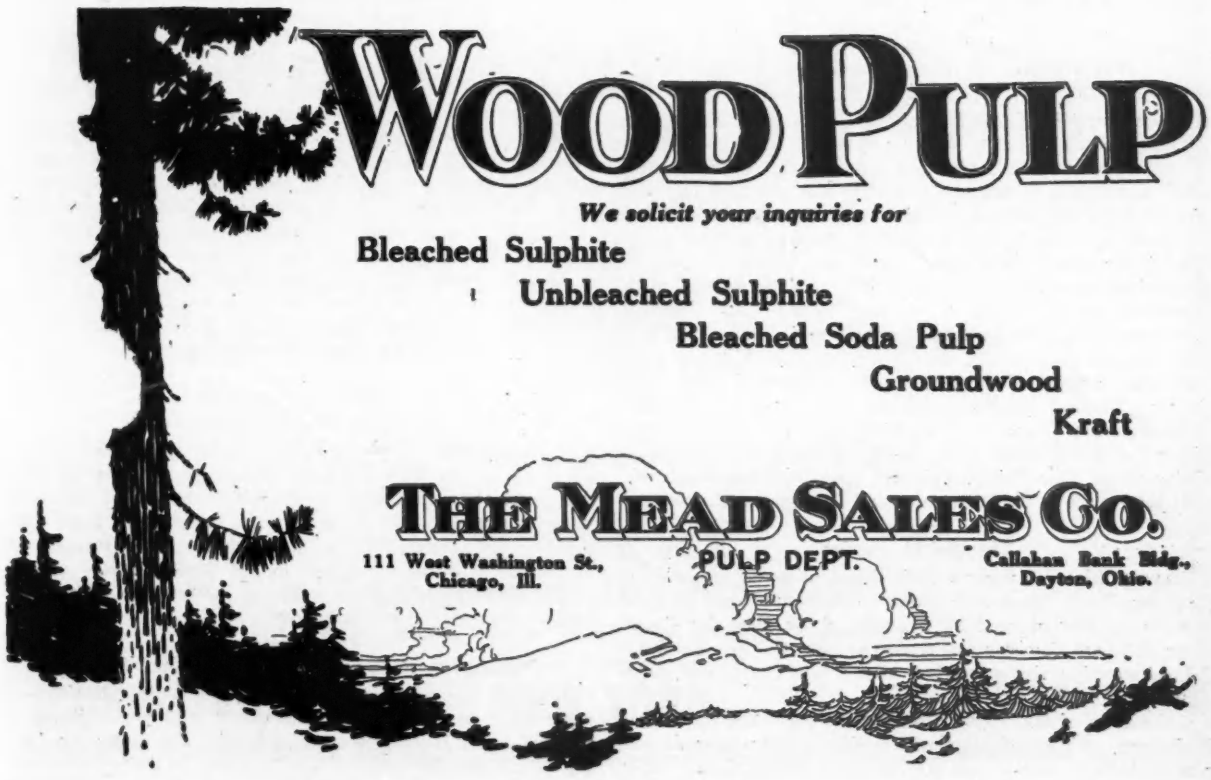

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Callahan Bank Bldg., Dayton, Ohio.

Obituary

William T. Whiting

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., January 9, 1923.—William T. Whiting, 84, vice president of the Wisconsin River Paper and Pulp Company since its organization and one of the best known papermill men in the middle west, died at his temporary home in Stevens Point on New Year's day after a brief illness from pneumonia. The funeral was held on Wednesday, January 3, at Stevens Point. The body was placed in a vault where it will remain until spring when it is to be taken to Ripon for interment in the family lot.

Mr. Whiting was in his usual good health until a few days before his death. He had attended a Masonic meeting the night before his final illness and his condition was not regarded as serious until shortly before he died. Mr. Whiting had lived in Oshkosh for a number of years but had moved to Stevens Point last fall to be near his daughter who is a member of the Stevens Point high school faculty.

Mr. Whiting was born at Stamford, N. Y., but practically all his life was spent in Wisconsin. He attended Ripon college and served in the Civil War, attaining the rank of captain. After the war he returned to Ripon and seven or eight years later he went to Stevens Point where he acquired a tract of land along the Wisconsin river and soon after interested Fox River Valley capitalists in a project to develop his property by erecting a paper mill. The Wisconsin River Paper and Pulp Company was organized and Mr. Whiting was actively connected with that institution until a few years ago. Mr. Whiting also was interested in development of oil regions in Oklahoma, organizing the Whiting Oil Company which later were sold. Mr. Whiting also was connected with numerous other institutions.

The survivors include the widow, one daughter, two brothers, Spencer Whiting of Ripon and George A. Whiting of Neenah, president of the Whiting-Plover Paper Company.

Frederick Lindsey Curtis

[FROM OUR REGULAR CORRESPONDENT]

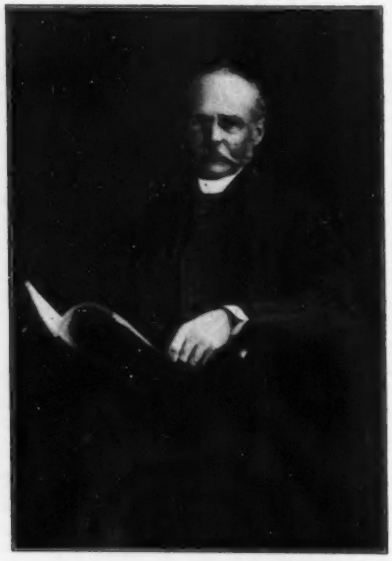
PHILADELPHIA, Pa., January 8, 1923.—Frederick Lindsey Curtis, treasurer of the Curtis & Bros., Inc., of Newark, Del., died on Saturday evening last at his home at Red Oake Road and Williard street, Wilmington, Del., after an illness of five weeks of pneumonia complicated by heart trouble. He was but forty-two years of age. Mr. Curtis was a native of Newark, Del., the son of Alfred A. Curtis and Sarah Lindsey Curtis. He was educated in the Newark Academy. The Friends' School and Princeton University, graduating from it with the Class of 1902. He first engaged in the paper business in Philadelphia and then in New York and afterwards became treasurer of the Curtis & Bros., Inc., at Newark. He was a nephew of former Chancellor Charles M. Curtis of Delaware and was one of the best known residents of New Castle County. He held membership in the Wilmington Country Club and the Union League of Philadelphia. He is survived by a widow and four children. Funeral services were held on Tuesday afternoon last from Trinity Episcopal Church, Wilmington, interment being made in the Wilmington and Brandywine Cemetery.

Timothy H. Fowler

HOLYOKE, Mass., January 8, 1923.—Brief reference was made in the PAPER TRADE JOURNAL last week to the death December 23 of Timothy H. Fowler, aged 74, treasurer of the Hampden Glazed Paper and Card Company and connected with various other financial and manufacturing enterprises, after a brief illness with pneumonia.

In the death of Mr. Fowler, Holyoke has lost a citizen who has filled many positions of trust with fidelity. Forty years ago he came to Holyoke and as treasurer of the Hampden Glazed Paper and Card Company had devoted his life to its developments. In 1897 he married Harriet E. Delano of St. Louis. They had just passed their 25th anniversary. Mr. Fowler has always been one of Holyoke's liberal givers and had been identified with many of its benevolent institutions.

He was born in Agawam February 14, 1849, the son of George and Mary Ann Hazen Fowler. In 1881 his brother, George F. Fowler organized the Hampden Glazed Paper and Card Company of Holyoke and the following year Timothy H. Fowler joined the company. In 1883 he was made its secretary and treasurer and had since held these positions. He was one of its board of directors,



TIMOTHY H. FOWLER

as well as a director of the Millers Falls Paper Company of Millers Falls, and the Valley Paper Company of Holyoke.

Mr. Fowler was a member of the Second Congregational church and took an active interest in all its activities. He was a trustee of the Holyoke City Hospital and treasurer of its endowment fund, director of the City National Bank and a trustee of the Mechanics' Savings bank, and also a director of the Holyoke City Library. Mr. Fowler's hobbies were hunting and fishing and the cultivation of flowers surrounding his beautiful home at 273 Essex street. Mr. Fowler is survived by his widow Harriet E. D. Fowler and his two brothers, George F. Fowler and Norman N. Fowler of Springfield, and several nephews and nieces.

Henry C. Campbell

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 9, 1923.—Henry C. Campbell, assistant editor of the Milwaukee Journal, known to nearly every paper manufacturer in the middle west, died January 2 at Milwaukee from pneumonia. Mr. Campbell was one of the most active workers for reforestation in this country. His newspaper was constant in its efforts to conserve present forest resources and constantly was urging a systematic plan of reforestation. Mr. Campbell was an authority on the subject.

Stone & Forsyth Increase Capital Stock

BOSTON, Mass., January 8, 1923.—Stone & Forsyth Company, paper merchants, has increased its capital stock from $200,000 to $400,000 by a 100 per cent stock dividend. The surplus on January 31 last was $284,628.

Agents
SUNDS AKTIEBOLAG
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Strong Unbleached Sulphite
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Stocks carried on Dock for prompt delivery

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New York Trade Jottings

John Mathews, Chief of the Paper Division at Washington, D. C., was among the New York trade visitors of the past week.

* * *

Maurice Frank, dealer in new cotton cuttings, has opened offices at Room 1018 Flatiron Building, with the telephone number, Ashland 2033.

* * *

James C. Deery, prominent New York paper dealer, has changed the location of his company to 464 Broome street, New York, with the new telephone number, Canal 1476.

* * *

J. Andersen & Co., of 21 East 40th street, New York, have applied for membership in the National Association of Waste Material Dealers, Inc., Times Building, New York.

* * *

G. D. Bearce, engineer of the News Print Service Bureau, left New York late last week for a month's trip through the Canadian mills, stopping at Albany Monday of this week on the way North.

* * *

The board of directors of J. F. Patton & Co., Inc., of 342 Madison avenue, New York, announce that on the first of January, 1923, the name of the company will be changed to Mead, Patton & Co., Inc.

* * *

Louis Leonardis, of 150 Nassau street, New York, announces that commencing January 1 he has entered into business for himself, handling all grades of paper stock, rags, waste paper and paper mill supplies.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, Canadian Pacific Building, New York, last week sent notices to members of the annual meeting of the Bureau to be held at Montreal, Que., January 26.

* * *

Ernest R. Behrend, president and general manager of the Hammermill Paper Company, of Erie, Pa., left New York Tuesday of this week on the first lap of a six-months' cruise around the world aboard the steamship *Resolute*.

* * *

The Fort Lee Paper Company has sub-leased from the American Bureau of Real Estate, in co-operation with A. Kane Company, the warehouse at 2304 12th street, New York, along the New York Central Railroad siding for a term of years.

* * *

Harry and Ben L. Gerofsky, graders and packers, specializing in new cotton cuttings, and formerly with Gerofsky Brothers, Inc., announce that they are now located in their new seven-story building at 15-17 Greene street, New York. The phone number is Canal 0015.

* * *

E. Salomon and H. Rosenberg, formerly of the American Woodpulp Corporation, of 347 Madison avenue, New York, are in temporary offices at 46 Cedar street, New York, Room 501, with the phone number John 4372. They are transacting a paper mill supply business.

* * *

Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, and one of the charter members of the Adirondack Mountain Club, with headquarters at Albany, N. Y., was re-elected a member of the board of governors of the Club at a meeting held last Saturday.

* * *

The Allied Paper Mills, of Kalamazoo, Mich., announce the appointment of J. W. Quimby, vice-president of Allied Paper Mills, Inc., in charge of their New York office and warehouse, effective January 1. Mr. Quimby assumed his new duties upon the resignation of D. C. Culbertson.

* * *

The Charles W. Knode Company, Inc., formerly of 115 Broadway, New York, has moved its office to 52 Broadway, Room 220, New York, with telephone Broad 3014. This concern now represents the Chillicothe Paper Company, the Appleton Coated Paper Company, the Marr-McDonnell Company, and Charles H. Wright and Son.

* * *

The business formerly carried on by R. F. Hammond at 342 Madison avenue, New York, has been incorporated under the laws of the State of New York and will be carried on as usual at the same address, with the same personnel, and with Mr. Hammond as president and general manager. After January 1, 1923, payments of accounts should be made to R. F. Hammond, Inc.

* * *

Dr. Hugh P. Baker, executive-secretary of the American Paper and Pulp Association, and Oliver M. Porter, secretary of the Woodlands Section of the Paper Industry, are both members of committees to arrange for joint meetings of the American Forestry Association and the New York State Forestry Association. Dr. Baker was one of the founders of the latter organization.

* * *

Frank E. Brophy, for the past fifteen years connected with Vernon Bros. & Co., has resigned from that concern and joined the organization of the Domestic Mills Paper Company, to develop their coated, book paper, bond and board division. Facilities are excellent for handling these types of paper in the company's new home in the Terminal Stores, 629 West 27th street, New York.

* * *

Taking effect January 1, the name of Castle, Gottheil and Overton, dealers in chemical pulp, rags, bagging and old papers, of 200 Fifth avenue, New York, was shortened to Castle and Overton as a result of the death of Leon Gottheil, the third partner, several months ago. William A. Castle and Frank C. Overton, in their announcement to the trade, stated that business will be continued as usual under the new name and at the same address.

* * *

Following along the same general lines as the Kennelly Paper Company, paper merchants, of 200 Fifth avenue, New York, the Kennelly Paper Company of Massachusetts was formed at a meeting held in Boston January 4 with the following officers: Quincy P. Emery, president; Thomas C. Green, vice-president and secretary, and Albert Kennelly, treasurer. The new corporation will deal principally in book papers and will be located at Room 329, 10 High street, Boston, Mass.

* * *

According to the Traffic Bulletin of the National Association of Waste Material Dealers, Inc., dated January 5, 1923, the Interstate Commerce Commission has denied the petition of complainant in the case of the Waste Merchants' Association of New York vs Director-General, Docket No. 10509. This is the case of the local New York Association commonly known as the "loading" case, wherein they asked for reparation on account of being forced to load cars where the carriers' tariffs provided that the carriers would perform the loading.

* * *

The annual dinner and dance of the Whitaker Paper Company, of 50 Great Jones street, New York, was held last Saturday evening at the Hotel Commodore. All the salesmen and office force of the New York Division of the company were invited, 27 of the 57 present belonging to the selling branch of the organization. Following the dinner, speeches were made by A. L. Whitaker, president of the concern, Larz Hammel, C. W. H. Dunbar, D. H. Taggart, R. E. Kreimer, of the company, and E. O. Dorman, the New York manager of the Champion Coated Paper Company.

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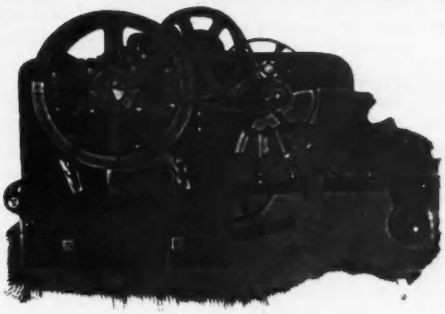

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For Roofing and Felt Stock

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Canadian Manufacturers Under Patents: WATEROUS ENGINE WORKS CO., Brantford, Ont., Can.
I. MARX & CO., London, E. C., sole agents for the United Kingdom

Increased Capacity Lower Cost Per Cord

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Ryther Slasher

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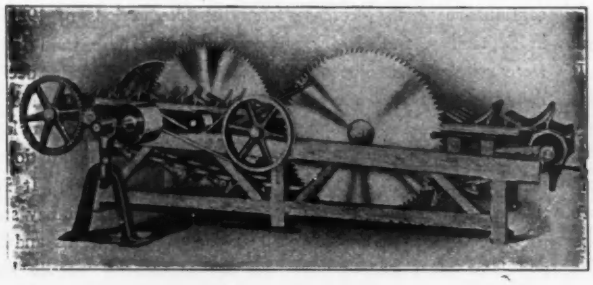

Built in all sizes to handle logs from 4 feet to 32 feet in length. Can be arranged to trim either one or both ends of logs if desired.

RYTHER & PRINGLE CO.,
Carthage, N. Y.

Editorial

Vol. LXXVI New York, January 11, 1923 No. 2
FIFTY-FIRST YEAR

An Encouraging Outlook

As far as the paper and pulp industries are concerned, the *Monthly Review* of Credit and Business Conditions, published by the Federal Reserve Bank of New York, points out that production during 1922 far exceeded that of the preceding year. In a chart showing the relative advances in wood pulp and paper production, the former is seen to have increased 22 per cent over 1921 and the latter 31 per cent. Without allowing for seasonal variation, a table is presented showing graphically the marked declines in stocks on hand expressed as percentages of estimated normal. Using 100 per cent as the estimated normal stocks this table indicates that supplies of wood pulp diminished from 141 on July 1 to 78 on November 1 and that total paper stocks were depleted from 144 to 118 during this period. Whereas the production of paper was held at normal last June, it was computed to be nine per cent above normal by October; on the other hand, wood pulp production during the last six months of 1921 declined from an estimated rating of ten per cent above normal in June to eight per cent below normal before the close of the year.

On the whole, industrial conditions are immeasurably brighter than they were at the outset of the year 1921. Despite the transportation congestion in recent months, for the six weeks' period ended December 9 carloadings were 24 per cent above the same period last year and 7 per cent above the corresponding period in 1920. The November wholesale trade, in and around New York, was 14 per cent over November, 1921 and 12 per cent over that month in 1920. Latest reported earnings of factory workers are nearly 7 per cent higher for last November than for November of the preceding year, substantial increases in the number of factory workers have taken place and New York employment agencies report a larger number of vacancies. Paper men are justified in feeling that these conditions constitute ample grounds for optimism in summing up prospects for the year to come.

Know Your Costs

Investigating fatal accidents is a duty of government. Human life is highly prized under the Anglo-Saxon theory and when it is snuffed out by other than natural causes, the state must know why and place the responsibility where it properly belongs.

Accidents in business, however, are seldom investigated, and yet though human life is not involved human welfare surely is. It will be interesting not alone to know how commercial accidents have happened but to learn the underlying causes. Thus we may guard against new accidents.

We often smile over the old saying, "There is nothing certain but death and taxes." But is this true? There is nothing more certain than figures. We can say two and two are five, and base our calculations accordingly, but four is all that we can ever get truly from this addition. A large proportion of our commercial accidents occur for the reason that the operators of a business enterprise are endeavoring to convince themselves and others that two and two make five. Estimates may be drawn up, but, unless these estimates provide for every possible cost and every reasonable emergency, the final result will not bear out the estimate.

When he was chairman of the Federal Trade Commission, the Hon. E. N. Hurley was firmly convinced that only a minor part of our industries knew what their production actually cost. Let us confine our observations to simple wholesale or retail establishments. Must we admit that failure to calculate operating costs has brought disaster to many enterprises of this type and has also brought surprises to those in control.

J. H. Tregoe, secretary of the National Association of Credit Men, said recently: "Were I asked what is the paramount duty of business operators, whether large or small, I should immediately respond, Know your costs." Everything may seem to be going along gaily, with plenty of sales. The situation will change rapidly, however, when it is discovered that the profits were more than eaten up by the costs. 'Know your costs.' They are at the base of price movements.

The credit departments of the nation are not engaged in any more serious task than that of keeping trade lines free from disasters caused by deficient cost accountancy methods.

Failures in 1922

The return to normalcy during 1922 is interestingly outlined in *Bradstreets'* review of the business failures for the past year. This report, which has just been published, says that "while 1922 was what might be termed a year of reconstruction and repair after the storms of 1920 and 1921, a large, in fact record, number of enterprises evidently proved to be beyond saving, and the past year, the third since the bursting of the boom of 1919, will very probably hold for some years to come the distinction of having seen the greatest number of casualties and the second largest total of failure damage in the country's history. That the failure tide was inclined to ebb was proved early in 1922 by the rapid decline in number from the peak month of January, but it was not until September that the monthly totals fell behind the like month of 1921. This decrease was significant, however, in view of the damage to industry and the delay of fall trade caused by the scarcity of fuel and the paralyzing of transportation growing out of the coal and railway shopmen's strikes. It seems entirely probable that a great deal of unnecessary loss to farmers, manufacturers and merchants and a great many failures might have been saved if these two strikes had been avoided. The later fall months showed a continuance of the decrease from the like periods of 1921 noted in September, and the December totals of failures and liabilities were relatively small for a usual clean-up period. The decline in liabilities from 1921 was evidence that the more urgent liquidation of the concerns doomed to failure had been partially completed in the earlier year. In this respect, the course of liquidation after panic and depression ran true to previous experience. It is true that we did not have the old-time acute panic and currency scarcity in 1920, but the after-liquidation, first of large concerns and banks, and later of a large number of smaller traders, was in keeping with the records of other depressed years. For the avoidance of

the crashes that signalized the old-time American panic, the workings of the Federal Reserve banking system may be truly claimed to be chiefly responsible, and this system, despite the criticisms leveled at it, proved in 1920-22, as in 1914-15, the salvation of the business community as a whole.

"Nineteen-twenty-two proved notable in some other respects than those just mentioned. It is true that a big toll was taken of American business in that year, but when the possibilities contained in the bursting of the boom are considered, and the vast accessions to American business life in the years from 1918 to 1920 are remembered, the fact that the rate of business mortality, the proportion of those failing to those in business, proved to be only slightly over 1 per cent—1.08 per cent to be exact—was in a high degree encouraging. This percentage was only a shade higher than in 1915 and 1898, the former year reflecting the damage caused by the outbreak of the great war, and the latter the practical completion of the liquidation following the twin panics of 1893 and 1896. There was also notable in the figures of assets and liabilities in 1922, proof that the percentage of business solvency in 1922 was not so great as in the two previous years; in other words, the strain was less acute and the failures of solvent concerns were less marked than in either 1921 or 1920.

"There were 22,400 failures reported to *Bradstreet's* for the full calendar year 1922, an increase of 11.9 per cent over 1921 and of 164 per cent over 1920, while as compared with the boom year 1919, the failures were four times as large. Liabilities for 1922, $646,955,633, were 14 per cent smaller than in 1921, but 51 per cent in excess of those of 1920, over five times the liabilities of the boom year 1919, and 81 per cent in excess of the year 1914. The assets of 1922, $364,602,438, proved to be only 56.3 per cent of the liabilities, whereas the proportion of assets in 1921 was 59 per cent, and in 1920 64.3 per cent. The number in business in 1922 in the United States was 2,074,617, a gain of 1.2 per cent over 1921, but as failures increased 11.9 per cent, the proportion of those failing to those in business rose to 1.08 per cent, as against ninety-seven hundredths of 1 per cent in 1921, forty-three hundredths of 1 per cent in 1920, and twenty-nine hundredths of 1 per cent in 1919, the latter the lowest percentage ever recorded since *Bradstreet's* compilations of failures were begun."

Geo. M. McKee Heads Algonquin Paper Co.

OGDENSBURG, N. Y., January 8, 1923.—At the meeting of the directors of the Algonquin Paper Corporation held here George M. McKee of Montreal, was elected president and general manager; Frank A. Augsbury, vice-president; Edward L. Strong, secretary-treasurer; Frederick L. Regan, assistant manager; and William E. Westbrook, assistant-treasurer.

The Algonquin Paper Corporation capitalized at $2,000,000, has recently taken over the stock of the Ogdensburg Paper Mills, Inc., which formerly operated the ground pulp plant in the Continental building.

I. P. Increases Wages at Livermore Falls

[FROM OUR REGULAR CORRESPONDENT.]

LIVERMORE FALLS, January 8, 1923.—Announcement is made of an advance in wages in several of the departments of the International Paper Company at Livermore Falls. The increase ranges from two to seven cents an hour, and will apply to about 35 per cent of the employees. It is made at this time to place all men on a par with the company's big competitors.

Good Demand for Print Paper in October

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., January 8, 1923.—That the October conditions of the printing industry in the United States were of a healthy trend is indicated in the chart just issued by Jos. A. Borden, of the American Writing Paper Company's Department of General Service and compiled by the Research Division.

The chart, which graphs paper purchases as well as printing sales, is drawn from observations of field representatives of the Department of General Service, from the Index Data Sheet issued by the Department of Research of the United Typothetæ of America, and from statistics obtained from printers and paper merchants throughout the country.

October printing sales not only show a continuation of the upward trend which started in July, 1921, but represent a substantial increase over those of October, 1921.

The tonnage of paper sales, however, remained the same as for the month of September with the value of paper purchases slightly lower, a difference in value and tonnage which may be explained by the general increase in the price of paper which took place during October.

Examination of the chart for the previous four years shows that there is usually a slight decrease in the volume of printing sales during November. It is to be expected, therefore, that the next chart to be issued will show a temporary decrease or at least a temporary halting of the upward movement of this curve.

The volume of magazine advertising has fallen off during November in previous years and this year has been no exception to this general rule.

As pointed out in previous charts, however, the upward trend may be expected to continue for a number of months to come, possibly with temporary halts. This contention is favorably supported by recent developments reflecting directly the increase in business, such as figures on car loadings representing physical commodities going to market, and bank clearings outside New York, which indicate roughly the value involved in business transacations. Car loadings are near the record figures of 1920, while outside bank clearings showed in October more than the usual seasonal expansion.

Bob Hewitt Buys Exchange Seat for $95,000

J. Robert Hewitt, formerly of the PAPER TRADE JOURNAL, his numerous friends in the paper industry will be interested to learn, has purchased a seat on the New York Stock Exchange for $95,000. Mr. Hewitt joined the editorial staff of the PAPER TRADE JOURNAL just after his graduation from Williams College in 1916. When the United States entered the war he enlisted in the navy and was rapidly promoted to the rank of ensign. At the conclusion of the war he returned to the PAPER TRADE JOURNAL to join the advertising department, which position he left about eight months ago to become connected with the banking house of Halle & Steiglitz. The PAPER TRADE JOURNAL wishes Mr. Hewitt, and we know we are joined in this wish by his many friends among the paper men, unlimited success in the new career in which he has so auspiciously started.

Parker-Young Co. Buys Timber in Florida

[FROM OUR REGULAR CORRESPONDENT.]

PORT ST. JOE, Fla., January 4, 1923.—The Parker-Young Company of Boston has bought 168,000 acres of timberland in Calhoun county for approximately $1,000,000, officials of the Park Wood Lumber Company, operating branch of the Parker-Young Company, announced here today. A tract of 144,000 acres was bought from the Baycal Timber Company of Chicago, a subsidiary of the Continental and Commercial Trust & Savings Bank, Chicago, and smaller tracts from individuals. The footage of the timber is estimated at 300,000,000 and will require 10 years to cut.

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FOR NEARLY A CENTURY

Exclusive Manufacturers

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Ryan-Seaman Process

DRY SATIN WHITE

The Latest Development in The Coated Paper Industry

Casein
Crystal Boro Phosphate
(A solvent for casein)

ALUM

Both Commercial and Iron Free
FOR PAPER MAKERS

Pulp Satin White
English China Clay

THE KALBFLEISCH CORPORATION

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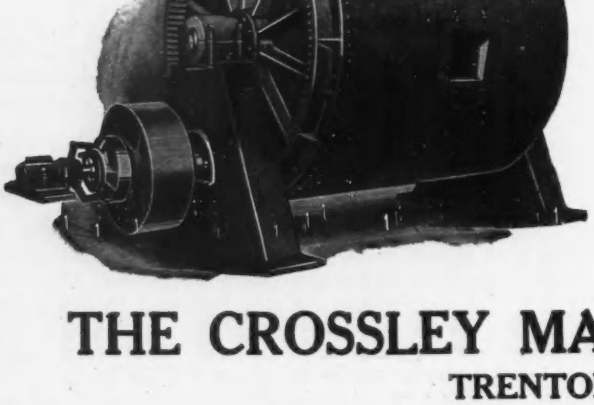

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Conducted by W.G. MacNAUGHTON, Secretary

RECENT DEVELOPMENTS IN PAPER-MAKING*

By T. D. Nuttall, C.B.E.

Amongst the most notable developments that have taken place during recent years has been the remarkable increase in the width of the paper machine and its speed. This has reference mainly to those machines making the cheaper qualities of paper from wood pulp, such as "news" and kraft papers.

"News" and kraft papers have a comparatively short life, and are not called upon to stand such exacting tests as are required of the better class papers made from rags, esparto, etc. In the case of "news" the main point is that it shall be sufficiently strong and evenly formed that it will successfully pass through the printing press without undue broke, and that it shall possess a surface which will show up plainly the illustrations which are becoming more and more an important feature in the daily press. Kraft and wrapping papers must be able to meet certain tests of strength and folding.

The opportunity for mass production on individual machines making "news" and kraft papers has been much greater than on machines making finer qualities, in the manufacture of which every care has to be taken lest an attempted increase in production brings in its train a corresponding decrease in quality.

On the finer qualities of paper the bulk of the work is done before it reaches the paper machine, and it is necessary to regard the paper machines proper as so many taps providing an outlet for all the work that has gone before. One tap more or less does not materially alter the total capital outlay, or the total labor involved in the production of the paper.

This argument has the greater weight when it is remembered that the cost of machines making fine papers is low compared with the rest of the mill equipment.

On these grounds, therefore, paper machines making fine papers have not made the same advance in width or in speed, and any increased output that is required has been obtained by an additional machine rather than by increased width or speed on individual machines.

Considerable advances have been made, nevertheless, on the machines making fine papers, the tendency being to incrase the width rather than the speed. Such advances, however, have been slow because there has not been the same pressing economic necessity as has been the case with the cheaper papers.

In the case of the cheaper papers the situation is entirely different. The preparatory part of the paper mill is small, and the paper machine proper represents by far the largest and most expensive unit in the mill, and the unit on which the output of the mill mainly depends. Even so, the illustration of the tap must not be lost sight of.

Many people are of opinion that there will come a point when machines will arrive at a width or speed beyond which, for economic reasons, it will not be profitable to go.

As regards the width, there is no mechanical reason why machines should not be made any width. It is simply a question of making the moving parts sufficiently large in diameter to resist deflection, journals sufficiently large to carry them, and gearing of such proportions as will drive them.

Some 12 months ago a discussion took place under the auspices of the Technical Section of the Canadian Papermakers' Association, the subject being a comparison between wide and high speed news print machines. Some very interesting statistics were presented, two widths of machine, 202-in. and 156-in., being compared, and figures were given covering initial outlay, operating cost, power, labor, clothing, etc.

For the *wide* machine the following claims were made:

Its efficiency is equal to that of the narrow machine;
It is no more difficult to operate;
The machine clothing costs no more per ton of product;
Maintenance costs are less;
There is a saving in labor cost;
The initial cost of the wide machine per inch of wire is lower;
Radiation losses are reduced, the radiation points, such as cylinder ends, etc., being practically constant in the case of both the wide and the narrow machine.

Experiments carried out on a 100-in. machine some years ago showed that the radiation loss was about 30 per cent. On a 200-in. machine, with double the output and practically the same radiation surface, a saving of 15 per cent in the steam used for drying may be expected. Power costs per ton of paper made were stated to be about the same.

The width of the "news" machine is governed by the sizes required by the printing press. In Canada and the U. S. A. this has been standardized at 73 ins. Most of the "news" machines installed in recent years give 148-in. trim or two widths, and two machines to give 22-in. or three widths, made by Messrs. Chas. Walmsley & Co., of Bury, are expected to start up this year.

Figures from the 221-in. machines will no doubt assist in the controversy now going on between the advocates of great width as against high speed, and will probably enable a decision to be made as to whether the economic maximum width has now been reached.

It is in this connection significant to note that recent orders for

*Read at a General Conference of the Technical Section of the Papermakers' Association of Great Britain and Ireland.

"news" machines call for two widths or 148-inch machine.

The point which is most interesting to the practical papermaker is undoubtedly the increase in speed. The time when 100 ft. per minute was a very high speed is still within the recollection of some of the older papermakers. A certain well-known papermaker, on being told that his machine was running at 100 ft. per minute, declined to believe it until he had himself checked the speed with his watch.

In 1897 a number of well-known British papermakers made a tour of the United States, and on their return reported that they had seen machines making "news" at 500 ft., a statement which at that time it was on this side found difficult to believe. Yet today we are informed of machines running at 1,000 ft. per minute, and are promised that 1,200 ft. may be expected in the near future.

It is proposed to trace the various steps by means of which these high speeds have been attained.

There are four main problems to be faced in making paper at a high speed, namely:

(1) Forming the sheet.
(2) Removing the water.
(3) Felting the fibers or pressing them tightly together while the sheet is in a moist condition.
(4) Feeding the paper through the machine.

Forming the Sheet

Relatively speaking, the well or pond of pulp behind the slice is stationary, and the water and fibers are called upon suddenly to assume the velocity of the wire, the tendency being for the fibers to place themselves in line with the direction of flow. On slow running machines this tendency receives an early check as the water leaves the fibers quickly, and they are deposited in good formation on the wire whilst under the influence of the shake.

With the wire passing under it at increasing speeds, however, the water does not drop through so readily at normal elevation, and the influence of the flow remains sufficiently long as to disturb the formation of the sheet. To counteract this the wire was raised at the breast roll end so as to cause a declivity or pitch to enable the pulp to attain as early as possible the speed of the wire. Some ten years ago the pitch of the wire was raised to 14 ins. and even 18 ins. with this object.

With still higher speeds experience showed that even this pitch was not sufficient to prevent the malformation of the sheet, and another method of giving the impetus to the pulp was adopted, viz., to increase the depth of the pond behind the slice and by the influence of the head to spout it on the wire at an increased velocity.

The theoretical head that is required to spout out water at different velocities is approximately as follows:

Spouting Velocity. Ft. per minute.	Head. Inches.
300	4
400	8
500	13
600	19
700	26
800	33
900	42
1,000	51
1,100	61
1,200	71

There is at the moment a difference of opinion as to which of these methods gives the best results, the deep pond or the inclined wire.

There is a machine making "news" at 1,000 ft. per minute with a pond behind the slice 28 ins. deep and the wire pitched 36 ins. There is also a machine making a well-formed sheet of thin kraft papers at 850 ft. per minute with a pond behind the slice of 48 ins. and a wire that has a slight rise from the breast roll to the boxes.

The advocates of the high-pitched wire intend to try a wire pitched 84 ins. or even 96 ins., and those of the deep pond propose to go up to 72 ins. It will be very interesting to see the result of the experiments of these two schools of thought on high speeds. Perhaps the best results will be obtained by a combination of the two methods.

The wire on the high-speed machine has generally no shake, but in those cases where the shake is retained stationary slices are used.

Removing the Water

When the sheet is properly formed on the wire the next thing is to remove the water, which has up to this point been an indispensable ally. The water is removed by gravity, by contact between the table rolls and the wire, by suction boxes, by the pressure of the couch rolls and press rolls, and by evaporation in the passage of the paper over the drying cylinders.

In order that gravity may be enabled to take its due part in the removal of that portion of the water which must be removed before the sheet can be couched, it has been found necessary with increasing speed to increase the length of the wire so that the pulp may remain on it sufficiently long for that purpose. Wires on the 1,000 ft. per minute machines are now over 100 ft. long.

In this connection it may be mentioned that the tension on wires of this length is very great, and they should be made of the finest bronze.

On high-speed machines many of the breaks are caused by the wire seams cutting the paper as it passes through the couch rolls, and wire makers should devote their attention to making the wire without seam.

To relieve the tension on the wire, ball-bearings have been tried on the wire carrying or tube rolls. Experience has shown that tube rolls running on ball-bearings will not run as smoothly as on ordinary bearings, and on high speeds if a tube roll does not run smoothly it will whip and knock water through the sheet. Papermakers who have had experience of ball bearings on tube rolls now propose to leave them out on future machines. Tube rolls of 6 ins. to 9 ins. diameter are usual on the high-speed machines, and should be well balanced at the speed they have to run.

Six to eight suction boxes are required to distribute the suction space over a sufficiently large area. When the suction boxes are working well the couch rolls take out very little water. Their principal function is to felt the fibers and to drive the wire.

Felting the Fibres

This part of the work is done by the press rolls, which also remove a portion of the water. In the earliest paper machines only one set of press rolls was employed, but with increasing speeds more press rolls were found necessary, and on the high-speed machines of to-day four sets of press rolls are often found.

On some machines the fourth press was thrown out owing to troubles caused by the air getting between the felt and the paper, causing the paper to blister and wrinkle and to stick to the felt. This blowing and wrinkling can be avoided by a short run from the take-off felt to the nip, so that the paper does not lie on the felt previous to the nip, but strikes the press roll first as it enters the nip, allowing all air to escape.

The reversing press on the high-speed machines is now done away with, the paper running straight through all the presses.

Machines are now being planned with six sets of press rolls, on the assumption that a better and stronger paper can be obtained by thoroughly pressing the fibers together whilst in a moist condition. In addition there is also a certain economy in drying, and there is an opinion in certain quarters that in order to obtain additional output the proper thing to do is to add more press rolls rather than more drying cylinders.

Without doubt the most important development on that part of the paper machine which takes out the water has been the perfecting during recent years of the suction roll. Ever since the building

of the first Fourdrinier machine inventors have been busy endeavoring to produce a revolving suction box, in the first instance to obviate the friction of the wire passing over the flat boxes. During the past century innumerable patents were taken out, some of which were fairly successful. Many of them failed because they had pockets alternately open to the air and to the influence of the vacuum.

A constant non-pulsating vacuum is essential, and this was not obtained until the suction roll was placed in the position of the bottom couch roll.

The suction roll in this position consists of a revolving perforated shell, inside of which is a stationary suction box with radial adjustment whereby the suction space can be so adjusted that it corresponds to that section of the periphery which is covered by the paper. The suction space varies in width from 5 ins. to 8 ins., according to the diameter of the roll.

The first suction couch rolls were not entirely successful, for the one reason that no means were provided to regulate the pressure between the packing of the fixed member (the suction box) and the inner surface of the rotating member (the revolving perforated shell). Means are now provided to regulate this pressure by an adjustable stopper, the invention of Mr. W. H. Millspaugh, and this step, overlooked by previous inventors, marks the real commencement of successful suction roll construction.

The next step was to make the bottom press roll into a suction roll, and this application of the revolving suction roll will probably have very far-reaching effects. The suction press roll removes the well of water in the press roll nip, removes air from the felt and from between the felt and the paper, holds the paper firmly to the felt, preventing the top roll from picking it off and thus prevents breaks. It is claimed that less pressure is required to remove a given amount of water owing to the partial vacuum maintained at the lower roll.

The above features make possible a reliable self-feeding machine, and have been taken advantage of in the design of the first machine to run at 1,000 ft. per minute. This machine was built by the Bagley and Sewall Company, and is running at the mills of the Wausau Sulphate Fibre Company, Mosince, Wisconsin. When the writer saw the machine on September 11, 1920, it was running steadily at 850 ft. per minute, and seven weeks later, on October 23, 1920, it attained 1,000 ft., thus creating a world's record. The sheet made was a thin sheet of pure kraft paper, substance about 13 lbs. D.C. All presses are omitted with the exception of one, the suction press. An overfelt is worked with the top press roll, inside of which is placed an inverted suction transfer roll, which causes the paper to follow the overfelt to the first drying cylinder, on which it is pressed, and by the dryer removed from the felt. This arrangement has eliminated three presses, with felts, felt rolls, doctors, etc., and the attendant outlay, maintenance, and liability to breaks.

The moisture content on reaching the first dryer is 68 per cent, only 2 per cent more than on an adjacent machine making similar papers of the same substance, which has three more presses than the high-speed machine. This points to the conclusion that additional presses are only necessary where, on heavier sheets, it is necessary to close or felt the sheet whilst in a wet condition.

Regarding the power required to produce the vacuum, it is claimed that on most papers the heat saved in the drying of the paper more than compensates for the additional power required.

Speaking generally of suction rolls, open free stock, little beaten and light weights do not show so great a saving in steam as is the case with close or "greasy" and well beaten stocks.

The suction roll on the wire enables the machine man to work much more water through the strainers and on to the wire and keeps the wires cleaner.

The retention of china clay or filling is an important matter. Most of the clay is lost in the transit of the web over the wire, and the loss is due to sudden drainage of the water, which by erosion and the action of gravity carries the suspended filling and fine fibers with it. The table rolls, suction boxes and couch rolls, by causing sudden drainage, bring about this loss of filling material.

Assuming that the nip at the couch roll is ⅛ in. wide (it is probably less rather than more), an average couch roll exerts a pressure of 500 to 600 lbs. per square inch at this point, and literally squirts the water and filling with it out of the sheet.

A suction roll removes the water quite as effectively from loaded papers with a pressure of 7 to 8 lbs. per square inch (the difference between the external and internal pressure (the action taking place gradually as the paper passes over 5 to 8 inches of the suction roll's circumference, *i. e.*, that portion of it which represents the width of the vacuum box inside the mantle.

The water is mostly absorbed by the large volume of air passing through the web, a point which has only been appreciated since the introduction and general use of suction rolls.

The coarser the mesh of the wire the swifter is the drainage at each point, and consequently the more filling is lost. It is claimed that the suction roll permits the use of finer mesh wires with the same or longer life than coarse wire with couch rolls, and that as a consequence more filling can be retained.

Tests made on a "news" machine, running at 450 ft. per minute, showed ash from couch roll papers to be 15 per cent of the bone dry weight, whilst the ash from suction rolls papers was 17 per cent. Both sheets were made from the same pulp and filling, with the same finish, and handled on the same wire felts and weights on press rolls. Whether this holds good on all substances and qualities there is not sufficient data to determine, but it is worthy of note that the suction couch roll is in universal use in the U. S. A. on machines making book or printing paper. "News" machines equipped with suction couch and press rolls are now running at 750 ft. per minute, and are expected to reach the 1,000-ft. mark before long.

On colored papers where pigments are used, a two-sided effect cannot be avoided, but where anilines are used this difficulty is largely minimized by the use of a dandy, and by reducing the vacuum as much as possible.

Feeding Through the Machine

There comes a point when the speed of the machine is so great that it is impossible to feed through by hand, and it has been necessary to invent automatic appliances to overcome this difficulty.

Foremost among these are the inventions of Mr. Elmer Pope, who automatically feeds through from the couch roll to the reel by means of compressed air. The usual feeding strip is formed on the wire and is blown from the top couch and press rolls on to the succeeding felt by a double jet of compressed air at a pressure of about 80 lbs. per square inch. It will be recognized that the air pressure, size of nozzle, direction, etc., must bear a definite relation to the width of the feeding strip.

The drying cylinders have been arranged directly above one another, partly to help the automatic feed and partly to give a long draw from the top to the bottom dryer, giving more open space for the moisture to escape. This arrangement assists the feeding through and drying, but as it necessitates an intermediate gear or jockey pinion, there is considerable back lask at the high speeds outweighing the advantages.

Probably the most difficult problem was to feed from the last cylinder into the calender nip. An attempt was made in the first instance to abolish the calenders and to obtain the finish by woolen felts and cylinder press rolls, also to run cylinders one on top of the other. The calender still remains, however, and the paper is blown from the last cylinder to the calender nip along ingeniously contrived guide plates.

Another device for feeding through the dryers is the Sheahan rope feed, which consists of endless ropes running in grooves turned in the front end of the drying cylinder face.

The difficult point of taking from one section to the other has been successfully overcome. Drum reels are generally used, and in order to overcome the difficulty of changing reels, Mr. Pope has invented a reel on which the paper is split by a jet of compressed air, and the reel shells changed from a pair of temporary bearings to the working bearings by mechanical means, practically eliminating broke.

The calm transfer of the paper at the high speed from one reel shell to another is very striking to the spectator, who would naturally expect some difficulty at this point.

Considerable improvements in the paper machine drive have been found necessary to allow the fragile web of paper to be transferred from section to section of the machine at these high speeds without undue broke. As is well known, the web of paper alters in length and width during its passage over the machine. On the one hand we have greaseproof or imitation parchment made from well hydrated stock which shrinks in width and increases in length during the whole of its journey from the couch roll to the reel. On the other hand we have "news" which increases in length during its passage through the wet presses and afterwards shrinks in the drying process. Differences in thickness of the same class of paper also make necessary considerable alteration in the draw.

To meet these changes of expansion and contraction it is necessary to provide means whereby the machine tender can adjust the speeds of the different sections of the machine relatively to each other, so that the paper may not only be transferred from one section to another without breaking, but that it may follow its natural expansion or contraction without being unduly stressed.

In the earliest days the machine drive was an ordinary drive with straight pulleys, with the first press shaft as the main shaft, and the speed variation between the sections was obtained by lapping the pulleys by hand with pieces of felt, a crude and dangerous practice.

Cone pulleys and belt shifting gear gradually became the general practice, but left room for improvement, as the wide and slow running belts were subjected to great wear and tear from their contact with the strap forks.

A distinct advance was made by the adoption of a high-speed master shaft, called the "Marshall" driving train, by means of which the speed of any section of the machine can be adjusted without disturbing that of any other section. The "master" or line shaft runs parallel to the centre line of the machine, and each section of the machine is driven from it through a pair of reduction gears, light belts on conical pulleys connecting the line shaft and the pinion shafts. Friction clutches were placed in the conical pulleys for stopping and starting each section of the machine, operated from the front side. This drive became very popular as the machine sections were bound together more firmly than ever before owing to the driving power and speed adjustment for all the sections coming from one source, the master shaft.

Many other forms of reduction gear drive came into use, most of them having for their object the substitution or spur gears for bevels, or the abolition of the troublesome friction clutches.

The advent of the wide and high speed "news" machine began to make trouble for all these types of drive. There is a fixed maximum safe speed for driving belts, about 5,000 ft. per minute, and as machines were speeded up the ratio between the belt speed and the paper speed gradually diminished. In addition, the moving parts on the machine became larger in diameter and heavier in weight. This called for gears of very generous proportions to withstand the greater tooth pressure necessary and to provide satisfactory wearing co-efficients.

Considerations of cost, perhaps, made the machine builder too optimistic on these points, with the result that the "Marshall" drive gradually acquired a reputation for excessive wear and tear and maintenance costs.

A return has been made to the original direct drive, as with the higher paper speeds and by the use of large diameter pulleys a satisfactory belt speed can be obtained, giving the required power with a reasonable width of belt. In this modern form of flat drive the line or master shaft is replaced by a series of countershafts connected by belts or ropes, which give a similar result, but not quite as satisfactory on account of the slip which cannot be entirely eliminated from belt and rope drives.

This return to the direct drive was made not only on high speed "news" machines, but in some cases on machines making printings and writings of greatly varying substances. It was found that with larger diameter pulleys it was not possible to obtain sufficient speed variation for the wide ranges of substance without using pulleys of abnormal width, and in such papers as require great variations between the sections, a return has been made to the "Marshall" or some other form of reduction drive on which small diameter pulleys can be used.

Now the electrician has come forward with separate or individual motor drives to the machine sections.

Some 15 years ago independent motors were installed to drive each machine section, but without any common control. Varying conditions on the machine disturbed the mutual speed relationship, and the result was unsatisfactory. Since that time great improvements have been made, and many arrangements are under consideration both for altering and direct current motors, the principal ones being the Harland Interlock, General Electric, American, Westinghouse, Metropolitan-Vickers, British Thomson-Houston.

A singular coincidence is to be found in the fact that just as the master shaft of the "Marshall" drive ties the section together, so in the case of the "Harland Interlock" drive the motors are tied together by a similar shaft which transmits no power, but simply acts as a speed constant.

When the individual electrical drive has been thoroughly worked out it will possess many advantages. It will eliminate belts and ropes, cone pulleys, belt guides and friction clutches (the motors being connected to the machine sections through a pair of reduction gears) and losses due to the slipping of belts. It occupies less space, and in the case of new mills will bring about a certain economy in the first cost of the buildings, basement drives being no longer necessary.

Accessibility is a feature, as the back of the machine may be approached almost as freely as the front.

The speed control on the entire machine is effected by one handle, and the control panel is provided with a starter by means of which the whole machine can be started up as a single unit, or any individual motor can be started or varied in speed independently of any other.

What is the Maximum Economic Speed in an English Mill?

The high-speed machines which have been mentioned run under the most favorable conditions. The ground wood and sulphite are prepared on the spot and used immediately. In the newer mills the sulphite is not even taken up in laps, but is pumped direct to the machine chest and blended in the required proportions by means of consistency regulators, such as the Trimbey.

Any irregularities in the mechanical pulp mill can at once be corrected and a more uniform pulp obtained, which is not the case in an English mill which uses of necessity imported pulp of many makes.

A further question is that of loading. The higher the speed the less clay can be carried.

The relative prices of pulp and china clay have in this country a bearing on the question, in times of dear pulp the tendency being slower speeds and greater percentage of loading, and the reverse when pulp is cheap.

On the question of economic running speed, it would appear that this must be left to the joint consideration of the commercial and technical advisers in the mill management. The working conditions in any particular mill and the standard quality required are limiting factors.

PAPER MAKING WIRES*

By V. Bouyer, Manager of the Wire Cloth Factory of Rai-Tillières, France.

The main function of wire cloth in the paper industry can be briefly described by stating that the "wire" of a continuous paper machine, which is the form under which wire cloth is most frequently used in the industry, acts as a continuous screen which allows the pulp to drain after the millions of fibers of which the latter is composed have been felted together into what will become a sheet of paper on drying.

Though the methods of using the wires may differ quite widely (wires for hand moulds, for cylinder machines, for fourdrinier machines with or without dryer wires), the wires themselves are all pretty much the same, though the different uses to which they are put require somewhat different properties.

A study of wire cloth should certainly form part of the education of the paper making engineer; for he will frequently have to turn his attention to this part of the paper machine, either to choose the type which is best suited to his purpose, or to watch it and prevent or remedy the numerous accidents or defects against which he is liable to come up.

In order to make this article as clear as possible, we shall divide it into four parts:

(1) Study of the manufacture of wire cloth, more particularly of that which is used in paper making;

(2) Different kinds of weaves used for paper making wires;

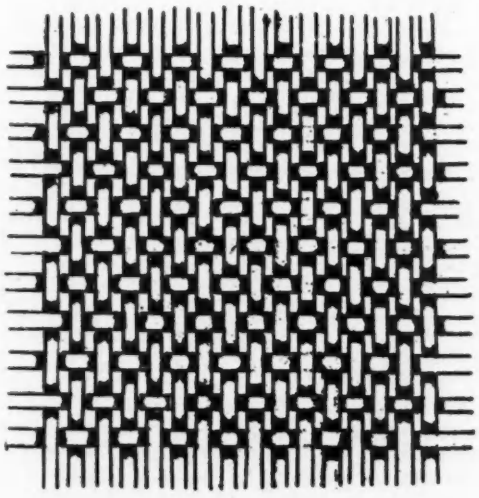
(3) Selection of wire according to the grade of paper;

(4) Troubles, accidents, and causes of deterioration.

We shall also consider dandy rolls, the manufacture and use of which are very closely related to those of the wires proper.

Manufacture of Wire Cloth

The methods used for weaving wire cloth are identical with those used for textile weaving. If a metal is ductile, that is, if it

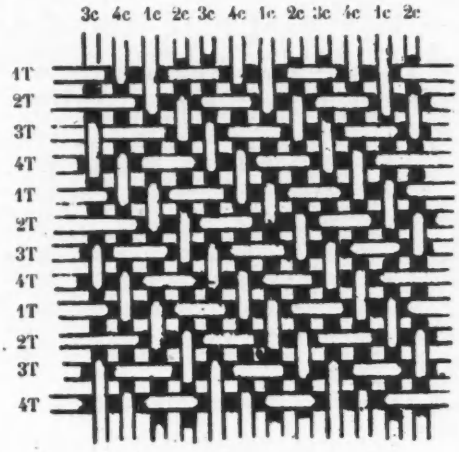


Plain Weave

can be drawn into a wire, this metal wire can be woven just as readily as cotton, flax, wool, silk, etc. In practice, the only metals which are woven are copper and its numerous alloys, and certain grades of steel (hammer hardened, annealed, galvanized, or tinned).

Wire cloths are put to a host of different uses, either domestic (collanders, screen doors and window screens, keeping flies off food, etc.) or industrial (milling, coloring matters, lime, cement, coal classifiers, chemicals, reinforced glass, and finally paper making).

Wire cloth for paper making are put out in such a variety of fineness and grades and must have such characteristic properties that their manufacture is entirely different from that of other wire cloth, which is generally known as "sieve-making." And moreover the methods of weaving are also differentiated by the fact that paper



Twill

making wires are made in widths of two, three, four, or five meters, and even more, while wires for sieve-making are seldom more than one meter wide.

For technical reasons, which will be given further on, nearly all paper making wires are made from copper alloys, usually bronze or brass. In exceptional cases these alloys are coated with tin or with lead to protect them against the action of chemicals.

Wire cloths are classed according to the manner in which the wire threads are intertwined, or, as it is usually put, according to the "weave." Some weaves are the same as are used in making textile fabrics: plain, twill, repp. Others are used exclusively in weaving wire cloth: double warp (plain and crossed), triple warp, laid.

In weaving there are two sets of threads, or wires in the present instance, the warp and the shute or filler. The warp wires are those which run in the direction of the cloth and go from one end of it to the other, while the shute wires are those which go from side to side.

Plain Weave.—In the plain weave warp wire passes alternately over and under successive shute wires, and the next warp wire does likewise, but it passes under the wire over which the preceding warp wire has passed, and vice-versa. It follows that all the shute wires work in exactly the same manner, passing alternately over and under successive warp wires; and also each shute wire passes under the warp wire over which the preceding wire has passed and vice versa.

In the plain weave, which we shall find recurring several times as far as the method of working the wires is concerned, alternate warp wires all work in the same manner, passing over and under the same shute wires. If the warp wires were all numbered, the even wires would pass simultaneously over the same wires, while the odd ones would all pass under these same wires, and vice-versa.

*(Lecture given to the students at the French School of Paper Making, Grenoble, France, during the year 1920-1921.) (Translated from *La Papeterie* xliii, September 10 and 25, and October 10, 1921, by A. Papineau-Couture.)

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When the cloth is woven in this fashion, with single wires, and when the spaces between all the warp wires are equal, we have a plain weave. It is the simplest, and also the most widely used in paper making.

TWILL CLOTH.—Suppose we number the warp wires in groups of four, 1C, 2C, 3C, etc., and the shute wires 1T, 2T, etc. Then the wires are woven as follows:

1C passes over 1T and 2T, under 3T and 4T, and then for the second set of four shute wires over 1T and 2T and under 3T and 4T, and so on.

2C goes over 2T and 3T, then under 4T and 1T, and then again for the next set over 2T and 3T and under 4T and 1T.

3C goes over 3T and 4T, under 1T and 2T, and so on.

4C goes over 4T and 1T and under 2T and 3T, and so on.

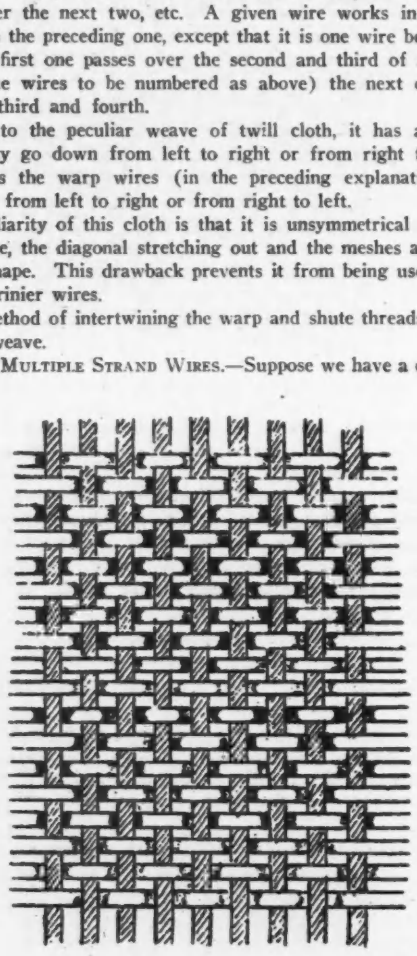
If now we examine the shute wires, we shall see that they work in exactly the same manner as the warp wires. Each wire, whether warp or shute, passes over two consecutive wires, then under two wires, over the next two, etc. A given wire works in the same manner as the preceding one, except that it is one wire behind, that is, if the first one passes over the second and third of a set (assuming the wires to be numbered as above) the next one passes over the third and fourth.

Owing to the peculiar weave of twill cloth, it has a diagonal which may go down from left to right or from right to left according as the warp wires (in the preceding explanation) were numbered from left to right or from right to left.

A peculiarity of this cloth is that it is unsymmetrical and easily deformable, the diagonal stretching out and the meshes assuming a lozenge shape. This drawback prevents it from being used as such for fourdrinier wires.

This method of intertwining the warp and shute threads is known as twill weave.

USE OF MULTIPLE STRAND WIRES.—Suppose we have a cloth made

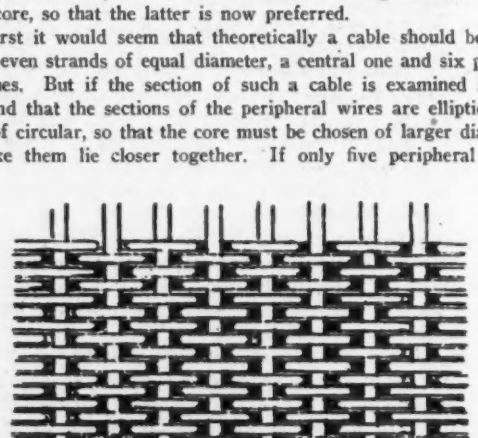


MULTIPLE STRAND

with a plain weave, in which the spaces between the warp wires are equal, but the warp wires themselves consist of several strands.

The multiple strand wire consists of five or six strands twisted around a core. For a long time a textile core was considered preferable to a metal core, as the surrounding wires would lie closer together against the core, leaving practically no empty spaces. But as a matter of fact such a wire is less likely to keep its shape after weaving: owing to the softness of the core it is crushed by the beating of the reed, and the openings between the strands are made smaller; moreover, such a wire is not as strong as one with a metal core, so that the latter is now preferred.

At first it would seem that theoretically a cable should be built up of seven strands of equal diameter, a central one and six peripheral ones. But if the section of such a cable is examined it will be found that the sections of the peripheral wires are elliptical instead of circular, so that the core must be chosen of larger diameter to make them lie closer together. If only five peripheral wires



PLAIN REPP

were used, the core should be smaller. In practice, a multiple strand wire having either five or six peripheral strands and a core of the same diameter gives a smooth surface and sufficient resistance to deformation on weaving, so that in choosing between the two the main consideration is the strength of the strand of wire.

Sometimes we can have both the warp and shute wires of a plain weave cloth consist of multiple strand wires.

PLAIN REPP.—When the warp wires of a plain weave are placed at intervals equal to about three or four times the diameter of the wire and the shute wires are brought right up against one another so that there is no space between them, we have a repp cloth. This type of cloth has no open meshes and is quite opaque.

TWILL REPP.—Similarly, if we take a twill weave but bring all the shute wires right up against one another so there is no space between them, we have a twill repp, in which there are no open meshes.

PLAIN DOUBLE WARP.—Suppose we have a plain weave cloth in which each warp thread is replaced by two finer threads, parallel to each other and both working in exactly the same manner along their whole length. There is no space between these two wires, the spaces being between each pair of warp wires. It is called *plain* double warp, to distinguish it from the next type of cloth. The warp wires are much finer than the shute wires.

CROSSED DOUBLE WARP.—Suppose we have a plain weave cloth in which the warp wires are joined together, two by two, so as to close up the space which would normally exist between them, as follows: If we number the wires, one, two, three, four, five, etc., there will be no space between one, two, between three, four, between five, six, etc., but there will still be a space between two, three, between four, five, between six, seven, etc. In this cloth the warp wires are smaller than in the usual plain weave cloth, so that they are very much smaller than the shute wires. Cloth woven in

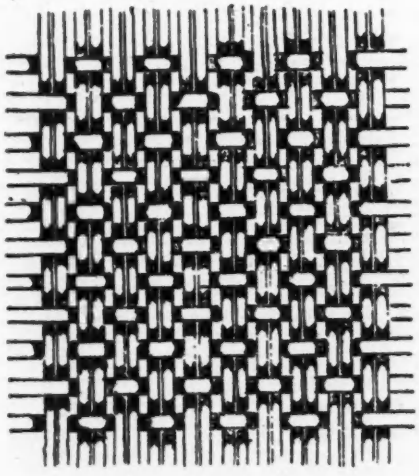
this manner is very similar in appearance to cloth having a plain double warp.

TRIPLE WARP.—Suppose that in a plain weave cloth the warp wires are joined together, three by three, so as to close up the spaces which would normally exist between them. If we number the warp wires one, two, three, four, five, . . . there would be no open mesh between one, two, three; four, five, six; seven, eight, nine; but the open meshes would remain between three four; six, seven; nine, 10. Just as in the case of the double warp cloths, the warp wires are smaller than in an ordinary plain weave cloth so that they are very much smaller than the shute wires. On examining this cloth it will be seen that the meshes are the same as for a plain weave in which each warp wire has been replaced by a set of three finer wires; but it should be noted that each one of these finer wires works independently as if it were part of a plain weave in which the warp wires had been disturbed, as stated above. The designation of *triple warp* is self-explanatory.

ZIG-ZAG TWILL.—We have seen that a twill weave is not symmetrical, and that consequently a twill wire cannot be used on a continuous paper machine, as it would be deformed diagonally. A twill weave, however, presents certain advantages over a plain weave, to which we shall have occasion to refer a little further on, so that attempts were made to retain the advantages due to the peculiar arrangement of the warp wires and at the same time to obtain a symmetrical weave. The following modification was adopted. Let the warp wires be numbered in sets of four: one, two, three, four; one, two, three, four; . . .

1C passes over 1T and 2T, as in twill,
2C passes over 2T and 3T, as in twill.
3C passes over 4T and 1T, contrary to twill,
4C passes over 3T and 4T, contrary to twill,

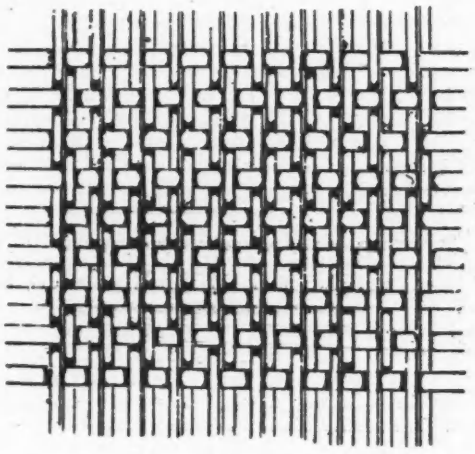
and so on. Each warp wire passes successively over two shute wires and then under the two following: the warp works the same as in twill, and therefore possesses the same qualities. But the shute wires work quite differently; one shute wire works the same as in twill, that is, over two, under two, over two, and so on, while the next shute wire passes over one, under two, over one, . . . just



PLAIN DOUBLE WARP

as in plain weave. The warp wires 1C and 2C begin a 45° diagonal which goes down from left to right, but the wires 3C and 4C form the beginning of a diagonal from right to left. The diagonal is thus broken and goes alternately from left to right and from right to left, which makes the cloth symmetrical so that it remains square when under tension.

LAID CLOTH.—With this cloth we must obtain an effect of intersecting lines known as a laid effect. In a laid paper there are a series of lines or marks, spaced 12 to 30 mm. apart, which are known as chain lines, while at right angles to these there are a large number of other lines or marks, less distinct than the former, in which the space between two lines or marks is practically the same as the width of the line itself. The latter are known as laid lines. In the wire cloth, the threads that are farther apart consist of two wires each, which are twisted around each other in such a manner as to imprison a transverse wire between them at each half turn. The size of the latter depends on the distance be-



CROSSED DOUBLE WARP

tween the former, being smaller the closer the twisted wires are placed.

Suppose we have a plain weave cloth in which the warp is extremely fine as compared with the shute. At intervals of about 27 mm. two fine warp wires are replaced by two wires of approximately the same size as the shute, which are placed close to each other so that there is no open mesh between them. The effect is the same as with a laid wire, the differences being that the two heavier warp wires are placed side by side instead of being twisted around each other and that the shute wires are held by the fine warp wires while in the laid wire they are free in the space between the twisted wires.

Classifying Wires by Numbers

We have just seen how wires are classed according to the manner in which they are woven. Each of the above wires can be made with different sized meshes according to the purpose for which it is to be used, and for mesh there is a certain size of wire which should be used to ensure that the finished cloth may have the required rigidity. The size of the mesh, which is known as the "number" of the wire cloth, is expressed by giving the number of meshes between the warp wires in one inch. This practice is so old that it would be very hard to supersede, and moreover the numbers which it gives are more convenient than those which would be obtained by taking metric measures instead of the inch, the decimeter giving numbers which would be too large, while the numbers given by the centimeter would be too close together.

However, the present method has a serious drawback, owing to the varying length of the inch according to the country where it is used. There is:

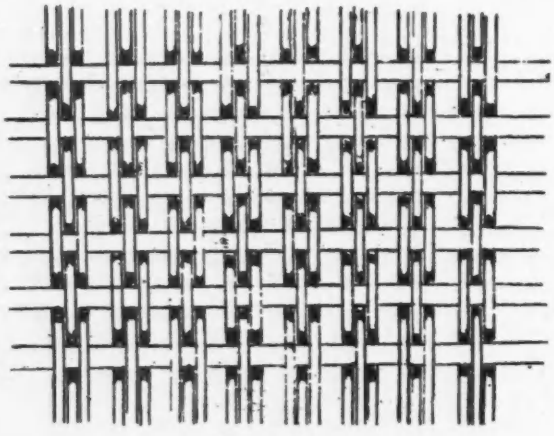
The French inch, which measures 27.7 mm.,
The Rhine inch, which measures 27 mm.,
The average inch, which measures 27.5 mm., which was adopted because it is easier to estimate half a millimeter than seven-tenths of a milimeter,
The English inch, which measures 25.4 mm., and on which are based all measurements in English-speaking countries.

When ordering a wire by number it is therefore necessary to state whether French mesh or English mesh is meant.

To determine the number of a wire one need merely count the number of spaces in a length of 27.5 mm. in a direction at right angles to the warp wires, which may be done either with the help of a 27.5 mm. measure or, better, with a thread counter adjusted to 0.25 inch, so that the number of spaces found is multiplied by four. This latter operation is not quite as simple as might appear at first sight, for if the thread counter does not lie quite flat on the wire the observed length may be greater than that for which the instrument is set unless it be observed quite squarely. The proper manner of looking through the lens is easily acquired with practice, and the best way of acquiring this practice is to first count the number of meshes in a full inch and then determine them in a length of a quarter of an inch by means of a thread counter.

It should be noted that in plain, twill, and zig-zag cloth the number of the wire is equal to the number of warp wires per inch; but in double-warp and triple-warp there are twice and three times as many wires as spaces. To eliminate all chances of error, the number of wires is frequently indicated after the number of meshes; for instance, No. 55/110 double-warp, or No. 60/180 triple-warp. Cloths are thus designated by giving their number and the kind of weave, as No. 65 plain, No. 28 multiple strand, No. 180 twill, etc.

From the foregoing explanation it is seen that the shute wires are never counted. This is done only in sieve-making where the cloths are generally woven with a square mesh; but paper making wires cannot be made with a square mesh, as will be explained further on. The number of shute wires necessarily depends on the strength of the wires used. First of all, the shute is always coarser than the warp; and secondly, in the weaving process the warp wires are crimped by the action of the loom, while the shute wires are crimped by the resistance of the warp wires due to the tension under which they are. So that if the shute wires were too close together the effort required to crimp them would be too great and would deteriorate the warp. In practice, for plain weaves, the number of shute wires is generally about 65 per cent to 80 per cent of the number of warp wires. An exception is made in the case of repp



Triple Warp

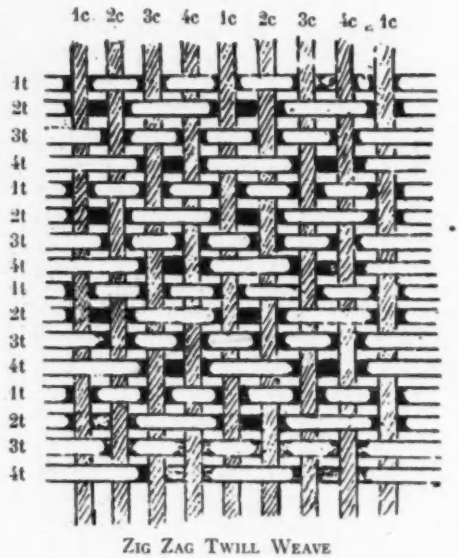
cloth; here the number of shute wires is also given as it is as important as the number of warp wires, for instance a No. 18/100 repp is one having 18 warp and 110 shute wires per inch.

For laid cloth the distance between the chain wires and the number of laid wires per inch are given, as 26 mm. 28 laid.

Function of the Wires in the Cloth

Warp.—On examining the method of working of a Fourdrinier wire, we shall see that it is subjected to several influences.

(1) First of all, it is under a high tension, especially in front of the couch roll, as it is the latter that drives the wire and must overcome: (a) the inertia and friction of all the rolls, including the breast roll which is quite heavy; (b) the adherence of the wire against the suction boxes, caused by the high vacuum which is used; (c) the brake action of the deckle straps. This tension is very far from negligible; for a wire two meters wide running at 60 meters a minute transmits 11.2 horse-power, and when it runs at 120 meters it transmits 30 horse-power, the power increasing more rapidly than the speed.



Zig Zag Twill Weave

(2) The warp is sometimes straight, sometimes convex (breast and couch rolls), and sometimes concave (stretch roll), so that it is alternately bent in opposite directions. This is very severe service for a wire and the latter must have certain qualities to be able to stand up for any length of time.

(3) If we feel the wire between our fingers, it will be noticed that we touch only the warp. During the weaving the warp wires are bent much more than the shute, so that all the wear of the wire on the parts of the machine that are stationary (or that do not turn properly) comes on the bends in the warp wires, and on them only.

(4) The wire is also attacked chemically by the pulps and by the acids used for cleaning the wires.

(5) If to the four preceding factors we add the fact that the weaving requires the use of a wire which can bend rather sharply without breaking at the bends, which is obtained only if the outside of the bend can stretch readily, we see that the warp wires must possess the following properties:

High tensile strength;

Considerable stretch;

Running on the machine must cause a minimum of hardening of the wire;

High resistance to wear through friction;

High resistance to the action of the chemicals used in paper making.

After numerous experiments, it was found that the alloy which possessed the above qualities to the highest degree was phosphor bronze containing from 92 per cent to 95 per cent of copper, and which is almost universally used on the European continent. Its average tensile strength is about 40 to 45 kilos per square millimeter (about 55,000 to 62,000 pounds per sq. in.) and its elonga-

tion is 45 per cent to 60 per cent when annealed under the conditions best suited for its use for weaving.

SHUTE.—When the wire is running on the machine, the tension to which the warp is subjected tends to make the shute wires bend around the warp wires more than was done during the weaving. If the tension is at all uneven across the width of the cloth, it will tend to sag and then gather together. To prevent this very serious accident, the shute is chosen somewhat heavier than the warp. The shute cannot work into the warp and bend around it unless it is softer than the warp; and it is essential that these two sets of wires should bend around one another to a certain extent to prevent the cloth from going askew on the paper machine, as would inevitably happen if the shute did not work into the bends of the warp. These two qualities of stiffness (partly obtained from the diameter of the wire) and softness are obtained by the use of a brass containing 67 per cent to 72 per cent of copper and 33 per cent to 28 per cent of zinc, which is properly annealed after drawing so as to give it the required strength and elongation. These alloys are the ones generally used.

It is a mistake to think that a better wire would be obtained by using a bronze shute for a plain weave, which is the one most widely used for Fourdrinier wires.

The stiffness of the shute would be very hard on the warp which would necessarily have to make sharper bends and would consequently wear out more quickly.

The use of a bronze shute must therefore be confined to the very exceptional cases where the cloth is not subject to the drawbacks mentioned above. In triple-warp cloth, for instance, a somewhat stiffer shute is used, as, owing to the nature of the weave, the cloth has a tendency to form long undulations which would interfere with its proper working.

(To be Continued)

THE PAPER INDUSTRY

(BUMAZHNAJA PROMYSLENOST)

A most interesting magazine is the Paper Industry (Bumazhnaja Promyslenost), an Organ of the Technical Economical Council of the Paper Industry Congresses, published at Moscow, Russia, of which vol. 1, No. 1, has been received from the Secretary's office through the courtesy of Mr. J. R. Minevitch, the American representative.

The program is given on the title page and on the first article, entitled: "Technical Economical Council, its Beginnings and Problems." This organization has arisen from a workingmen's Council (Soviet) and has as its aims: (1) To maintain an experimental station; (2) To publish scientific books on the paper industry and the magazine "The Paper Industry"; (3) To maintain a technical library; (4) To give, in connection with the technical faculty of the Karl Marx Political Economy Institute, courses in the paper industry and to take care of the Paper Industry Exposition.

The second article is by F. Bobrov on "Studies on Mechanical Paper Technology." This is a study of the questions of energy and power consumption in the various portions of the pulp and paper mill. It is entirely theoretical in character, no practical data being given.

L. P. Zherebov contributes an article on "The Influence of Sunlight upon the Vegetable Paper Sizes," in which he reviews previous work and discusses his own experiments on the effect of sunlight upon vegetable colors, as they are used or formed in vegetable sizings.

N. D. Ivanov discusses the "Composition of Rosin," and gives the results of his own analyses; he also discusses the coagulation and filtration of sizings.

I. I. Svanov contributes an article on "Sulphite Waste Liquors," in which he gives analyses of the liquors and points out the destructive power of such liquors on the flora and fauna of the rivers into which these liquors are discharged.

J. G. Chincin reviews F. Krawany's book on "Internationale Papierstatistik."

I. A. Nikitin reviews the "Russian Writing Paper Industry for 1921." Tables are given showing the number of factories, the number of workers employed, the production of crude pulp, cellulose and paper in the various government districts. This is followed by a summary of the production by kinds of paper.

L. P. Zherebov discusses the "Raw Materials in Russia." The question of the conservation of the natural wood resources is viewed from the Russian standpoint and the situation as it exists in other countries is reviewed. The author then mentions the usual methods of conservation (forest economy, improvement in cultivation, etc.).

Pages 75-102 contain abstracts from a number of leading foreign paper magazines; pages 103-110 gives the results of a number of tests on Russian printing and writing papers made by the Gosudarstoeny paper testing station. Statistical abstracts are given on pages 119-130.

The closing pages deal with the constitution of the Council, members, etc.

The editorial staff include F. F. Bobrov, I. A. Nikitin, B. S. Stojanov and J. G. Chincin.

The Council is to be congratulated upon the appearance of this magazine as their official organ, and our only regret is that we do not know of men in the paper industry who can read and make available to American readers the results of their investigations.

The writer acknowledges his indebtedness to Dr. J. Pelc, who made the above comments possible.

C. J. WEST,
Chairman, Committee on
Abstracts and Bibliography.

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CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Properties, Chemistry and Testing of Raw Materials and Finished Products

Wood Fuel.—L. B. Schibbye and S. Scholdstrom. *Svensk Pappers Tidning* xxv, 159-160 (1922); *Chem. Abs.*, xvi, 4043 (Nov. 20, 1922). Results of investigations to find more economical burning conditions for wood fuel are shown in 12 graphs. The highest temperature obtainable by burning wood with 70 per cent of water and with 12 per cent CO_2 in the flue gas was 775°C. Lowering the temperature of the flue gas from 300° to 130°C. in small saw mills saves 18.3 per cent fuel. One cubic meter of wood weighing 271.3 kilos (55 per cent of water) was found to be 26.4 per cent more profitable than 1 cubic meter weighing 324 kilos and having 65 per cent of water. A saw mill using waste wood having 70 per cent water and yielding flue gas at 300° and 10 per cent CO_2 saved 16.5 per cent by raising the CO_2 content of the flue gas to 14 per cent.—A. P.-C.

Loading and Filling Materials.—Carl C. Schneider, Knowlton Bros. *Paper Mill* xlv, No. 45, 18, 46 (Nov. 18, 1922), *Paper Ind.* iv, 1259-1261 (Dec., 1922). Brief description of the use of fillers and of their properties, more particularly those of clay.—A. P.-C.

Reactions of Cellulose with Sodium Chloride and Other Neutral Salts. I. Preliminary Survey.—Helen Masters. *Chem. Soc. Trans.* cxxi, 2026-2034 (Oct., 1922). When thoroughly washed cellulose was washed with sodium chloride solution, it was found that the washings contained a very small but definite amount of acid. After washing with salt till no more acid was formed, by washing with water an amount of alkali was extracted which was practically equivalent to the acid extracted by the salt. These alternate extractions of acid and alkali could be continued practically indefinitely. Temperature apparently has no effect on the amounts obtained. Extracting the cellulose with decinormal solutions of ammonium chloride, sodium sulphate, barium chloride, and calcium chloride gave similar results, but varying amounts of acid and alkali were obtained.—A. P.-C.

Uses of the Microscope in Paper Mills.—James Strachan. Paper xxxi, No. 3, 7-10 (Nov. 8, 1922). An outline of the various purposes for which the microscope can be used in the paper mill.—A. P.-C.

Forestry

Use of Aircraft in Forest Operations.—H. S. Quigley, Price Bros. & Co. *Pulp and Paper* xx, 1017-1019 (Nov. 23, 1922). Brief outline of the method of making aerial surveys of timberlands, and of the usefulness and reliability of aircraft for this purpose.—A. P.-C.

Pulp Possibilities on the Pacific Coast.—A. W. Schorger, C. F. Burgess Laboratories. *Pulp and Paper* xx, 1045-1047 (Nov. 22, 1922). A brief outline of the characteristics of ground wood, of sulphite and of sulphate pulps prepared from the chief western woods, and of the possibilities of utilizing by-products (galactan from western larch, by-products of lumbering, redwood waste).—A. P.-C.

Groundwood Manufacturing and Equipment

Modern Practice in the Manufacture and Applications of Steamed Groundwood.—A. O. Bragg. *Chem. Met. Eng.* xxvii, No. 16, 793-797, No. 17, 842-846 (Oct. 18 and 25, 1922). A description of the present status and practical possibilities of the process, discussing the theory and describing the equipment used. The operation of a modern American mill is discussed.—A. P.-C.

Acid Process of Pulp Manufacture and Equipment

Pollution of Streams by Pulp Mill Wastes.—Geo. C. Whipple. *Proc. Am. Soc. Civil Eng.* xlviii, 1385-1392 (1922); *Chem. Abs.* xvi, 3991 (Nov. 20, 1922). The peculiar character of sulphite waste liquor is its sulphur content, acidity and high organic content. Among the effects produced by discharging this waste into rivers is to make the stream unsightly by reason of deposits of pulp and fungi and algae growths, the tendency to drive away the fish, injuring the water for boiler feed, while the lignosulphonic matter interferes with coagulation, reducing the efficiency and increasing the cost of filtration. Uniform policy regarding stream pollution is needed.—A. P.-C.

Wastes from Pulp and Paper Mills Chemically Considered.—H. W. Clark. *Proc. Am. Soc. Civil Eng.* xlviii, 1393-1396 (1922); *Chem. Abs.* xvi, 3991 (Nov. 20, 1922). Analyses are given for typical waste liquors from soda and sulphite mills. Neither of these liquors can be satisfactorily treated by any known method of purification other than evaporation and recovery of substances of value. They are exceedingly inimical to bacterial life and if mixed with sewage or other liquors and passed to filters they destroy the value of such filters. Much of the organic pollution in paper mill wastes is in suspension and may be recovered by passing through fine wire screens or by sedimentation. Ninety per cent to practically all the matter in suspension can be removed if 75 to 100 grains of aluminum sulphate per gallon are used. This means from 10,000 to 14,000 lbs. per million gallons of waste. Combination of screening, sedimentation and filtration will remove 70 per cent or more of the primary pollution matters of paper mill wastes.—A. P.-C.

Alkaline Processes of Pulp Manufacture and Equipment

Liquor Evaporators for Sulphate Plants.—O. Olsson. *Svensk Papers Tidning* xxv, 29, (1922); *Chem. Abs.* xvi, 4060 (Nov. 20, 1922). Modern plants use 25 per cent less fuel than the older types. With the proper use of waste heat a Kestner apparatus should have an efficiency of 85 to 90 per cent. Coupling pulp mills with saw mills eliminates the expense of preparing chips.—A. P.-C.

Pulp Treatment and Drying—Operation and Equipment

Save-Alls.—A. W. Nason, Green Bay Foundry & Machinery Co. *Paper Mill* xlv, No. 45, 16, 42 (Nov. 18, 1922); *Paper Ind.* iv, 1261-1267 (Dec., 1922). The function of save-alls is twofold: to recover stock which would otherwise be lost, and to detect leaks which would otherwise pass unobserved. The various types of save-alls, and more particularly those marketed by the Green Bay Co., are briefly described. The importance of not unduly overloading save-alls and of not recovering useless and harmful material (dirt, etc.) is emphasized.—A. P.-C.

Paper Manufacturing and Equipment

Rosin Size Control.—P. W. Codwise, Byron Weston Co. *Paper* xxx, No. 23, 7-9 (Aug. 9, 1922). The method consists essentially in titrating 50 cc. of diluted rosin size milk (not over 5 per cent concentration) in 200 cc. of water, at the boiling temperature, with decinormal sodium hydroxide. A 0.5 per cent solution of thymolphthalein in 50 per cent alcohol is used as an outside indicator. The end point is reached when it turns slightly blue. The indicator should be tested frequently for sensitiveness, and be made up fresh at least monthly. The titration should be carried out on a solution of a concentration of 1 per cent or less. The method is recommended chiefly for control purposes. It is

believed that it will be of especial value when dealing with rosin size solutions containing considerable unsaponified rosin and that in such cases it may be used to advantage as a supplement to a previously published control method which estimated the alkaline properties of the size. (Compare Codwise, *Paper* xxiv, No. 22, Aug. 6, 1919).—A. P.-C.

Rubber Latex in Paper Making.—Frederick Kaye. *India Rubber J.* lxiv, 435-442 (1922); *Chem. Abs.* xvi, 4062 (Nov. 20, 1922). In making latex paper it is essential that the latex be thoroughly diluted with water before being added to the beaten pulp, and it is best added towards the end of the beating process. With low percentages of latex, coagulation occurs spontaneously, but with higher percentages it can be effected by magnesium sulphate, acetic acid, or best of all with alum. It is important with alkaline pulps to have an acid reaction at the end to prevent loss of rubber in the water. This is emphasized by experiments where an amount of latex calculated to give 2 per cent of rubber in the dried paper showed by analysis only 1.7 per cent whereas with the same fiber and latex calculated to give 4 per cent, analysis showed 4.07 per cent. Latex in very small amount accelerates the rate of cellulose hydration and the time for a stock to reach a definite strength and quality can thus be shortened. For a paper of a certain finish, the fibers are closer and more uniform in texture with latex than without. Paper given the same beating times has been increased in strength by over 1,000 g. per square mm. and in breaking length by 1,000 m. through the addition of 0.5 to 1 per cent of rubber. Vulcanization of latex paper containing 5 to 30 per cent by the Peachy process further increases the strength and makes a stiffer paper. Many weeks' exposure to sun and rain did not cause deterioration of any latex paper. The use of latex is particularly recommended for (1) increasing the elasticity of a paper lacking this property but of high strength, (2) adding strength to weak paper made largely of waste and (3) increasing the folding endurance of any grade. Every grade can be improved in some property. The finest cotton and linen papers have been made with latex. Waterproof latex paper is suggested for packing food and for protecting young shoots on sugar plantations. Board, leather substitutes, linoleum, etc., can be made and dyed. So far, the best results in dyeing materials containing latex have been with basic colors. 3 to 3.5 gallons of commercial ammonia per 100 gallons of original latex is a safe amount for complete preservation.—A. P.-C.

Use of China Clay in Tinted Papers.—*China Clay Trade Rev.*; *Pulp and Paper* xx, 1043-1044 (Nov. 22, 1922). A general discussion of the use of China clay in colored papers, and of the possibility of using it to prevent mottling by first precipitating basic dyes on the clay and then using the latter to color the stock. The order in which color, size and alum should be added to the beater is also briefly mentioned.—A. P.-C.

The Revolving Suction Roll.—Harold Bing, Sandusky Iron and Foundry Co. *Paper Mill* xlv, No. 45, 22, 44 (Nov. 18, 1922); *Paper Ind.* iv, 1253, 1255 (Dec., 1922). A brief description of the Millspaugh suction roll and of its merits both as a couch and as a press roll.—A. P.-C.

Press Room Requirements.—S. M. Williams, New York *World* and DeGrasse Paper Co. *Pulp and Paper* xx, 1023-1025 (Nov. 23, 1922). A discussion of press room waste caused by bad splices, poor winding, improper wrapping, careless loading, rough handling, and press room operations.—A. P.-C.

The Curling of Fine Printing Papers.—H. H. Hanson and H. H. Hackett, Eastern Mfg. Co. PAPER TRADE J. lxxv, No. 21, 18-19 (Nov. 23, 1922); *Paper Mill* xlv, No. 46, 14, 40 (Nov. 25, 1922). A presentation of the fundamental principles involved in the curling of paper, of the general method of attacking the problem at the Eastern Mfg. Co., and of some of the experimental results and conclusions. Curling may be described as (a) surface action, (b) set and (c) static. The immediate causes of these three kinds of curling are discussed. The fundamental causes are also discussed under the following headings: Beating and jordaning, beater sizing, alignment of fibers, pressing and drying, tub sizing, finish, and pole marks (for loft dried paper). By directing preventive efforts all along the line of manufacturing, curling can be stopped; but it requires proper methods of testing, careful instructions to the crews, and everlasting watchfulness by the foremen.—A. P.-C.

Filter Paper Requirements.—L. C. Breed. *Paper* xxx, No. 24, 7-8 (Aug. 16, 1922). Brief outline of the manufacture and properties of filter paper for quantitative chemical analysis.—A. P.-C.

Articles Produced from Pulp and Paper

Blank for Making Conical Paper Cups.—D. F. Curtin. Can. patent 224,742, Oct. 10, 1922. Reissue of Can. patent 177,102 of May 15, 1917.—A. P.-C.

Cutting Condensite Celoron Gears and Pinions.—*Pulp and Paper* xx, 976 (Nov. 9, 1922). A description of the properties of "Condensite Celoron" made by the Diamond State Fiber Co. of Canada, Ltd.—A. P.-C.

Preparation of Vulcanized Fiber.—J. A. Sutcliffe. Eng. patent 183,497, Jan. 27, 1921. Vulcanized fiber, prepared by the zinc chloride process, shows a tendency to absorb moisture owing to the presence of zinc chloride residues. This defect is remedied, and a product obtained more suitable for use in the manufacture of machinery parts, insulators etc., by saturating the material immediately after the "washing off" process, or even after it has been dried, with strong ammonia solution. When completely saturated, the material is removed from the bath, washed, and dried.—A. P.-C.

Manufacture of Cellulose Compounds (Esters, Ethers, Etc.).—Plauson's Ltd., Eng. patent 183,908, April 28, 1921. Cellulose derivatives are made by treating cellulose, in a highly dispersed condition, with the desired reaction components, with or without condensing agents. The cellulose is dispersed by intensive mechanical disintegration at high speeds until the particles are about 0.0008 mm. in diameter, e. g., in the colloid mill (Eng. patent 179,124. Compare Frydlender, this journal lxxiii, No. 8, 48, Aug. 25, 1921). Examples are given showing how to prepare the phosphoric ester, acetate, sulphide, and methyl ethers.—A. P.-C.

Producing Yarn from Paper Pulp.—F. P. Priem assignor to Turk Gesellschaft. Can. patent 224,538, Oct. 3, 1922. The rubbing or rounding of the rovings is carried out separately from the roving producing machine shortly before they are spun.—A. P.-C.

General Equipment

Paper Mill Transmission Machinery.—G. N. Vanderhoef. *Paper* xxxi, No. 1, 7-12, No. 2, 12-14 (Sept. 6 and 13, 1922), No. 3, 33 (Nov. 8, 1922). A discussion of shaftings, bearings, couplings, pulleys and rope drives, showing the proper function of each and the most suitable types under various conditions.—A. P.-C.

Economics of Lighting in Pulp and Paper Mills.—J. H. Kurlander, Edison Lamp Works. PAPER TRADE J. lxxv, No. 21, 20-26 (Nov. 23, 1922); *Paper Mill* xlv, No. 46, 20, 44, 46 (Nov. 25, 1922). The author discusses the advantages of sufficient and well designed lighting in increasing efficiency and production, showing that the added expense is greatly exceeded by the increase in production. He gives figures showing that a 110 volt circuit is more economical for lighting purposes than a 220 volt circuit.—A. P.-C.

Lubrication of Paper Mills.—T. C. Porteus. *Paper Ind.* iv, 924-926 (Oct., 1922). A brief discussion showing the merits of lubricating greases for paper mill machinery.—A. P.-C.

Present Position of the Theory of Lubrication.—Gumbel. *Forschungsarb. Geb. Ingenieurw.* No. 224, 3-27 (1920); *Chem. Abs.* xvi, 3518 (Oct. 20, 1922). The author characterizes the condition of dry, liquid, and semi-liquid friction. The influence of temperature

on the viscosity of lubricants is represented by the equation $1/n = (\ln)_{min} + K(\theta - \theta_{min})^2$, where n is the viscosity and θ the temperature, θ_{min} being the temperature at which the fluidity (1/n) is a minimum. Engler's and Hofer's experiments show that K is greater the lower the viscosity of the oil. Olive oil would be the best lubricant and water entirely unsuitable as such. A new apparatus is proposed for the measurement of fluidity, the outlet opening being a capillary slit. The Von Dallwitz-Wegener theory, whereby the minimum quantity of lubricant required is dependent on the surface tension and the angle of contact between the lubricated surface and the lubricant, is criticized, and capillary forces are considered to be without influence on the friction between properly lubricated surfaces of machine parts.—A. P.-C.

A New Carbon Dioxide Recorder.—Electrician, lxxxix, 15 (1922); *Chem.* Abs. xvi, 3415 (Oct. 20, 1922). This CO_2 recorder is electric in operation, requires no chemical absorbent, has no delicate glass work, and is claimed to be very active and sensitive. The meter contains two identical spirals of platinum wire enclosed in separate cells in a metal block. One cell contains air saturated with water vapor and the other is open to the flue gases. The platinum spirals form two arms of a Wheatstone bridge circuit. When the current flows the spirals become heated, losing heat to the walls of the cells, their temperatures and resistances depending on the thermal conductivities of the gases surrounding them. CO_2 changes in the gas cause changes in its conductivity and a consequent change in the galvanometer needle deflection. The indicating or recording galvanometer can be calibrated to give direct readings in per cent of CO_2. A portable CO_2 and temperature outfit is illustrated and briefly described. It is enclosed with the recorder. Current is supplied by dry cells fitted into the lid of the case. When CO_2 readings are desired the flue gases are drawn past the CO_2 water by pressing a rubber bulb and the multiway switch is turned to the CO_2 position. For temperature readings a thermocouple is placed in the flue and connected by the two terminals, and the switch is turned to the position marked "couple." Each apparatus is illustrated.—A. P.-C.

Properties, Chemistry and Testing of Raw Materials and Finished Products

Cellulose Content and Pulp Yields of Some Australian Woods. L. R. Benjamin and John L. Somerville. *Chem. Eng. Mining Rev.* xiv, 377-379 (1922); *Chem. Abs.* xvi, 4062 (Nov. 20, 1922). The following figures give the yield of cellulose (bone dry basis), and the maximum and minimum yields of unbleached soda pulp from Australian woods: Candlenut (*Aleurites moluccana*), 62 57.2, 54.4 per cent; crow's foot elm (*Tarrietia argyredendrou*) 54, 50.4, —; swamp cypress (*Callistris glauca*), 43.2, 45.1, 41.3; blackbuck (*Eucalyptus pilularis*), 50.7, 52.7, 49.2; mountain ash (*Eucalyptus regnana*), mature 57.2, 53.2, 48.4; immature 53.8, 52.1, 48.4; karri (*Eucalyptus diversicolor*), immature 55.7, 52.3, 48.4; silvertop (*Eucalyptus siberiana*), 50.6, 46.2, 45; woolybutt (*Eucalyptus delegatensis*), 55.9, 52, 51.2; stringy-bark (*Eucalyptus obliqua*) 54.9, —, —; karri (mill waste), 57.5, 47.7, 46. A 2 to 3 per cent loss of weight occurs during the bleaching process. These woods compare favorably with representative pulp woods of North America as regards cellulose contents and yields of pulp.—A. P.-C.

Utilization of Maize Flowers, Stalks, and Leaves.—Joseph Burtt-Davy. *S. African J. Ind.* v, 367-364 (1922); *Chem. Abs.*, xvi, 4063 (Nov. 20, 1922). A review of research work and of patents. The inside of the maize stalk furnishes a nearly pure "natural" cellulose. It is used in the manufacture of celluloid, paper pulp, a floor covering similar to linoleum, viscose nitrates, insulation for refrigerator trucks, steam pipe and boiler coverings, and for dry cells for electric storage batteries. Maize paper is remarkably tough and devoid of siliceous matter and undesirable brittleness. It is particularly suitable for bank-note paper and for envelopes. Coarser husks are used for the manufacture of wrapping paper. The residue from maize straw is made into fodder and ethyl alcohol is obtained from the waste liquors of mills using the sulphite process.—A. P.-C.

Mitscherlich Pulp.—John E. Daley. *Pulp and Paper* xx, 1001 (Nov. 16, 1922). Brief description of the process of manufacture of Mitscherlich pulp showing its superiority over quick cook sulphite and the reasons for this superiority.—A. P.-C.

List of Abbreviated and Full Titles and of Addresses of the Journals From Which Abstracts Have Been Prepared for This Issue

Chem. Abs. .....Chemical Abstracts. E. J. Crane, Ohio State University, Columbus, Ohio.
Chem. Eng. Mining Rev..Chemical Engineering and Mining Review. Peter G. Tait, Scottish House, 90 William St., Melbourne, Australia.
Chem. Met. Eng. .....Chemical and Metallurgical Engineering. McGraw-Hill Co., Inc., Tenth Ave. at Thirty-sixth St., New York City.
Chem. Soc. Trans. .....Journal of the Chemical Society—Transactions. Gurney & Jackson, 33 Paternoster Row, London, E.C. 4, England.
China Clay Trade Rev. ...The China Clay Trade Review. Southampton Bldgs., High Holborn, W.C. 2, London, England.
Electrician .....The Electrician. Benn Bros., Ltd., 8 Bouverie St., London, E.C., England.
India Ruber J. .....India Rubber Journal. 37-38 Shoe Lane, London, E.C., England.
Paper .....Paper. 36 West Forty-fourth St., New York City.
Paper Ind. .....The Paper Industry. 356 Monadnock Block, Chicago, Ill.
Paper Mill .....The Paper Mill and Wood Pulp News. L. D. Post, Tribune Building, 154 Nassau St., New York City.
Paper Trade J. .....Paper Trade Journal, 10 East Thirty-ninth St., New York City.
Proc. Am. Soc. Civil Eng..Proceedings of the American Society of Civil Engineers. American Society of Civil Engineers, 33 West Thirty-ninth St., New York City.
Pulp and Paper.....Pulp and Paper Magazine of Canada. Gardenvale, Que.
Svensk Pappers Tidning...Svensk Pappers Tidning. Svenska Pappersbruksföreningen, Hovslagaregatan 3, Stockholm, Sweden.
S. African J. Ind. .....The South African Journal of Industries. The Government Printer, P. O. Box 373, Pretoria, S. Africa.

Dryden Paper Expansion

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., January 8, 1923.—A belated statement on Dryden Paper has made its appearance in the form of a circular to shareholders, being supplementary to the annual meeting recently held. W. A. Black, president, tells of the expansion of mill facilities, the new addition now being well under way. The additional capacity will be available within three months. Additions include a water power of 1,400 h. p., a paper machine capable of producing a variety of paper, and a groundwood unit to enable new lines of paper to be made, together with necessary equipment and buildings. The added capacity will allow the company to market more finished product rather than pulp. They were enabled to take advantage of a favorable market for machinery and construction. The addition will result in more economical manufacture. At present only 25 per cent of output is manufactured into finished product. Output of wrapping and building paper will be increased to 50 tons daily when the new equipment is turned in.

Freight Rate Hearing Postponed

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 2, 1923.—The appearance of a large group of New England paper mill representatives before the New England Freight Association scheduled for last month was postponed for several reasons until this month, the paper mill men and their organization desiring a little more time to complete their brief in favor of an adjustment of rates on all grades of paper and boards within the New England industrial radius and from these same points to trunk line territory outside.

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Trade-Marks Department

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The following are trade-mark applications pertinent to paper and pulp field pending in the United States Patent Office which have been passed for publication and are in the line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister building, Washington, D. C., or Bush building, 130 West Forty-second street, New York, trade-mark specialists.

As an additional service feature to its readers, the PAPER TRADE JOURNAL gladly offers to them an advance search free of charge, on any mark they may contemplate adopting or registering.

PAPIER, A. G.—No. 147,774. Fricotelle Et Cie, Paris, France. For papers for cigarettes.

THE PEACOCK LINE—No. 168,635. Flynn-Lennon Wall Paper Company, Joliet, Ill. For wall paper.

SANIKEEP FRUIT WRAPPERS—No. 170,255. Nashua Gummed and Coated Paper Company, Nashua, N. H. For paper wrappers for fruit.

Central Ohio Paper Co. Has Sales Convention

COLUMBUS, Ohio, January 8, 1923.—Strong opinion that "1923 will be a banner business year" was reflected in the sales convention of The Central Ohio Paper Company at the local company building, 226 North Fifth street, which closed Saturday, December 29. The convention was attended by 50 salesmen.

"Paper" and matters pertaining to it was the principal topic of discussion throughout the sessions. Talks on this subject were made by a number of men prominent in the paper trade. These included: W. J. Raybold, Housatonic, Mass., president of the American Paper and Pulp Association; W. D. Rogers, of the S. D. Warren Company, Boston, Mass.; R. O. Harper and R. B. Rising, vice-president and secretary respectively, of the B. D. Rising Paper Company, Housatonic, Mass.; A. M. Beimfohr, of The A. M. Collins Company, Philadelphia, Pa.; L. E. Nash, The Neekoosa-Edwards Paper Company, Port Edwards, Wis.; Col. B. F. Franklin, vice-president of The Strathmore Paper Company, Mittineague, Mass.; R. A. Wight and Mr. Calkins, of Crane & Co., Dalton, Mass., and James Wilson, The Hoover & Allison Co., Xenia. Local men included: D. M. Drenan, American Type Founders Company, Harry Bucher, Bycher Engraving Company and William C. Gast, Pfeifer Show Print Company; William Myers, The Columbus Litho Company, also had a place on the program. Two Columbus salesmen: H. S. Bronson and George E. Wood won first and second prizes respectively for writing the best paper on salesmanship.

On Friday evening all officers and employees and guests of the company, numbering 275, were entertained at the Columbus Country Club with a dinner and dance. This "Copco Family Dinner" as it is known to members of the company is an annual feature of the Central Ohio Paper Company's sales convention.

Appreciate Service of Trained Nurse

NEKOOSA, Wis., January 8, 1923.—The employees of the Nekoosa Mill of the Nekoosa-Edwards Paper Company, presented mill nurse, Miss Emma Long with a beautiful bronze table and electric lamp on January 1, 1923, in appreciation of her services in the first Aid Station on accidents as well as for the Employees' Mutual Benefit Association, made up exclusively of mill workers and her good work among the home folks.

Miss Long has endeared herself to the public of Nekoosa as well as the mill workers and their families. Her record of the hundreds of cases she handles every month is evidence enough of the good she is doing, but her many admirers were not satisfied with this showing alone. She is given much of the credit for the fine safety showing of the Nekoosa Mill in 1922, when that mill won the safety flag 11 months out of 12 over the Port Edwards plant.

To Manage Whitaker Sales in Chicago

J. T. Hillyer was appointed general sales manager of the Chicago division of the Whitaker Paper Company, taking up his new duties January 1. Mr. Hillyer was formerly vice-president and sales manager of the Paper Supply Company, dealer in fine and coarse papers, of Minneapolis, Minn.

He entered the paper business with the Wright-Barrett-Stillwell Company, September 1, 1900. Until March, 1921, when Mr. Hillyer allied himself with the Paper Supply Company, his successive duties listed in order included: dusting stock; filling orders for fine paper; city desk; head of city desk, cost accountant; city salesman for fine papers; country salesman for both fine and coarse papers; head of the coarse paper department; secretary of the company, and buyer of fine and coarse papers.

J. T. HILLYER

Shelby Wax Paper Co. to Move to Middletown

[FROM OUR REGULAR CORRESPONDENT]

MIDDLETOWN, Ohio, January 8, 1923.—Announcement was made last week that the plant of the Shelby Wax Paper Company, of Shelby, Ohio, will be removed to this city in the near future, the plant to be situated adjoining that of the Crystal Paper Company, with which the Shelby Company is merged.

The new company is to be capitalized at $100,000, with Z. W. Ranck, president of the Crystal Tissue Company, president; W. H. Muchmore, Shelby, vice-president and general manager; W. O. Barnitz, of this city, treasurer, and C. O. Sellen, Shelby, secretary and sales manager.

Mills in Norway and Sweden Busy

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., January 10, 1923.—According to recent cable advices from Assistant Trade Commissioner Sorensen at Copenhagen, the paper market in both Sweden and Norway is operating on a small margin of profit but the demand is firm and exports have been increasing. News of a rising market in England and the United States has tended to strengthen prices.

Paper mills are all operating and have orders for the next two months' production. Pulp mills in Norway have been forced to curtail production due to the shortage of water.

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A wise decision. Do the same thing, Mr. Jobber, and avoid tying up unnecessary capital and loading your warehouse with miscellaneous brands.

James Lawrence, President
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Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 10, 1923.—The purchasing officer of the Government Printing Office has received the following bids: 7,400 pounds 24 x 38—74 pounds; 9,500 pounds 27 x 38—95 pounds; 14,800 pounds 24 x 38—148 pounds rope manila paper, Maurice O'Meara Company, at $.1023; R. P. Andrews Paper Company, $.0815 and Old Dominion Paper Company, $.1447.

Bids will be opened at the printing office on January 17 for the following:

19,500 pounds (300 reams) 32 x 48—65 pounds White Rag Machine Finish Printing Paper.

38,000 pounds (500 reams) 38 x 48—No. 1, 76 pounds White Machine Finish Printing Paper.

The purchasing officer of the Government Printing Office has received the following bids:

36,000 pounds 22½ x 28½—75 manila tag board, calendered, in 24 inch rolls: Dobler & Mudge, at $.09 per pound; The Whitaker Paper Company, $.0893; Maurice O'Meara Company, $.0719; Wilkinson Bros. & Co., $.0621; R. P. Andrews Paper Company, $.074; Old Dominion Paper Company, $.0849.

345,000 pounds 25 x 38—35 white MF printing paper, in 18 inch and 19 inch rolls: Bryant Paper Company, $.06925 per pound; R. P. Andrews Paper Company, $.0687; The Champion Fibre Company, $.0758; International Paper Company, $.0715; Allied Paper Mills, $.0717.

100,000 pounds 25 x 38—45 white S & S C printing paper, in 38 inch rolls: Bryant Paper Company, $.07115 per pound; Kalamazoo Paper Company, $.0725; Allied Paper Mills, $.0739.

77,000 pounds 38 x 48—white bag M F printing paper: Bryant Paper Company, $.0985 per pound; Old Dominion Paper Company, $.1349.

5,000 3⅝ x 4 11/16—white writing envelopes, OSG: R. P. Andrews Paper Company, $6.59 per M.; Mathers-Lamm Paper Company, $2.15, and U. S. Envelope Co., $1.45.

The purchasing officer of the Government Printing Office will open bids on January 15 for 225 pounds (50 reams) of 19 x 24—4½ facing stereo tissue paper.

3,620 pounds (20 reams) 22½ x 28½—181 index bristol board.

The Bureau of Supplies and Accounts, Navy Department, will open bids on January 16 for 10,000 pounds of twisted paper twine.

The Bryant Paper Company has been awarded the contract for furnishing the Government Printing Office with 77,000 pounds (1,000 reams) of 38 x 48—77 white rag M. F. printing paper at $.0985 per pound, bids for which were opened on January 2.

La Monte & Son have been awarded the contract by the Government Printing Office for furnishing 2,637 pounds of blue and gray machine finish safety writing paper at $.238 per pound, bids for which were opened on December 26.

The Paper Merger Rumor in Canada

MONTREAL, Que., January 8, 1923.—Although denial has been given the rumor of a merger between Spanish River and Abitibi, it will not down. The reports are not definite enough to warrant anything like an interest, on that account, in the stock issues of the companies mentioned. While the reports are generally discredited, the Street is busy figuring how such a plan would work out, and what might be the result for stockholders. The view is that common shareholders would be in the way of a nice little melon were the deal brought to consummation. It is true that for some time past there has been a close marketing affiliation between the two big news print paper producers, but the matter is said to rest there. the ticker has not yet told of a merger story and until it does the rumor will not be allowed to figure in future calculations. Merger or no merger, however, the position of shareholders of both companies seems altogether satisfactory.

Newman-Kohn Company Starts Operations

The Newman-Kohn Paper Company, recently incorporated under the laws of the State of New York, has begun the manufacture of paper bags in Building No. 3, Bush Terminal Building, 219 36th street, Brooklyn. In addition to making bags, the concern also will represent mills making toilet and wrapping papers.

The president of the concern is Albert Newman, who for 11 years was sales manager in New Jersey of the Republic Bag and Paper Company. Mr. Newman enjoyed a wide acquaintance among the trade in New Jersey and was known especially for his willingness to serve which reputation he hopes to increase in the larger field in which he has entered. The trade will be visited by Mr. Newman shortly.

Leon A. Kohn is the vice-president and treasurer of the new concern. Previous to assuming this position, Mr. Kohn was the vice-president and treasurer of one of the largest wholesale grocery concerns in New Jersey.

Frederick G. Crane Heads Crane & Co.

DALTON, Mass., January 2, 1923.—At a meeting in Dalton this morning of the board of directors of the newly organized corporation, Crane & Co., Inc., formed to take over the paper manufacturing business of the partnership of Crane & Co. in Dalton and Westfield, the following permanent officers were elected: President, Frederick G. Crane; vice-president, Z. Marshall Crane; treasurer and general-manager, W. M. Crane, Jr.; clerk, Frederick G. Crane, Jr.; directors, Frederick G. Crane, W. M. Crane, Jr., Z. Marshall Crane and Frederick G. Crane, Jr. The company has a capitalization of $3,000,000, consisting of 30,000 shares of common stock at a par value of $100 a share. This morning the deed conveying the property from the partnership to the newly formed corporation was placed on record at the court house in Pittsfield by Atty. James F. Bacon of Boston, who is counsel for the corporation. The stamps showed a valuation of about $956,000.

Fuel Oil Committee Formed

BOSTON, Mass, January 2, 1923.—The fuel problem just now is receiving considerable attention. Chester L. Whittemore, secretary of the New England Paper and Pulp Traffic Association, has made an exhaustive investigation of the relative merits of coal and fuel oil for consumption in New England paper mills. Mr. Whittemore, who is transportation manager of the S. D. Warren Company stated that a New England fuel oil consumers' committee has been formed to investigate, and present the situation to the New England railroads with a request for an adequate and fair fuel oil rate. On the rate committee are A. A. Raphael, of the New England Paper & Pulp Traffic Association, and D. L. Taylor, of the Pacific Mills. New England paper men are keenly interested in Mr. Whittemore's study.

Elected Vice-President of Moore & Thompson Co.

The many friends of Maurice Rosenfeld, president of the Equitable Paper Bag Company, manufacturers of paper bags and sacks, with offices at 516 Fifth avenue, New York, and factory at Scholes street, Brooklyn, will be interested to learn that he has just been elected to the office of vice-president of the Moore and Thompson Paper Company, manufacturers of No. 1 kraft paper, with mills at Bellows Falls, Vt. This new connection will, naturally, tend to make the position of the Equitable Paper Bag Company a stronger factor in this field.

Estate of Late Frank E. Boston

GARDINER, Me., January 8, 1923.—Frank E. Boston, for many years agent of the Hollingsworth & Whitney Paper Company here, left an estate appraised at $308,611.75 according to the inventory just filed here.

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Urbana, Ohio

West Virginia Pulp and Paper Company

Manufacturers of

Supercalendered and Machine

Finished Book and Lithographic Papers

Offset, Envelope and Music Paper, High Grade Coated Book and Label Papers

also

Bleached Spruce Sulphite and Soda Pulp

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New York

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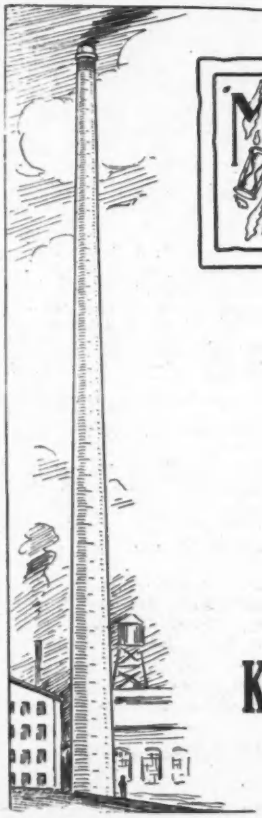


MAJESTIC, steel-ribbed, rock rooted, the 285 ft. K. V. P. smoke stack symbolizes the superior product of the big plant over which it presides.

If you are not acquainted with this organization whose two-fold ideal is "To excel in Paper product and just be good folks to do business with," the latch string is out. Come in!

KALAMAZOO Vegetable Parchment Co.

KALAMAZOO
MICHIGAN

GREASEPROOF PARCHMENT PAPERS

OF STANDARD QUALITY

Purity — Quality Plus

Ashmere — Equally Fine

Berkshire — Stands the Test

OUR PAPERS ARE EXCELLENT FOR MEAT MARKETS, GROCERS AND GENERAL PACKING HOUSE REQUIREMENTS

Mountain Mill Paper Co.

(Write for Samples and Quotations)

SALES OFFICE
110 E. 42nd Street
NEW YORK

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JANUARY 6, 1923

SUMMARY

News print .....621 rolls
Printing paper.....49 cs., 74 rolls
Surface coated paper.....94 cs.
Filter paper .....66 cs.
Drawing paper .....11 cs.
Hangings .....31 bls.
Wall paper.....38 cs., 2,201 bls.
Cigarette paper .....3,642 cs.
Photo paper .....98 cs.
Tissue paper.....4 cs., 8 bls.
Wrapping paper.....2,341 rolls, 80 bls.
Glass paper.....11 cs.
Packing paper.....1,605 bdls., 78 bls.
Miscellaneous paper..271 cs., 3,292 rolls, 1,912 bls.

CIGARETTE PAPER

P. J. Schmeitzer, Buckleigh, Marseilles, 46 cs.
British-American Tobacco Company, Adriatic, Liverpool, 51 cs.
R. J. Reynolds Tobacco Company, West Eldara, St. Nazaire, 1,460 cs.
American Tobacco Company, West Eldara, Bordeau, 1,860 cs.
P. J. Schmeitzer, Asia, Marseilles, 90 cs.
Zarre Tobacco Company, by same, 12 cs.
The Surbrug Company, Lochambeau, Havre, 13 cs.
De Manduit Paper Corporation, by same, 110 cs.

WALL PAPER

A. C. Dodman, Jr., Inc., Berengaria, Liverpool, 13 cs., 7 bls.
A. Murphy & Co., by same, 3 bls.
F. G. Prager Company, Finland, Antwerp, 2,061 bls.
A. Murphy & Co., Adriatic, Liverpool, 12 bls.
A. Murphy & Co., Hansa, Hamburg, 6 bls.
R. F. Downing & Co., Pr. Adams, London, 11 bls., 25 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Mesaba, London, 19 bls.
A. C. Dodman, Jr., Inc., Adriatic, Liverpool, 12 bls.

DRAWING PAPER

H. Reeve Angel & Co., Mesaba, London, 11 cs.

FILTER PAPER

H. Reeve Angel & Co., Mesaba, London, 10 cs.
Eimer & Amend, Noordam, Rotterdam, 8 cs.
E. Feugera, Majestic, Bordeaux, 48 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Finland, Antwerp, 94 cs.

PRINTING PAPER

P. C. Zuhlke, Finland, Antwerp, 49 cs.
J. H. Scott Paper Company, by same, 74 rolls.

NEWS PRINT

Parsons & Whittemore, Hansa, Hamburg, 74 rolls.
H. Reeve Angel & Co., by same, 200 rolls.
Chemical National Bank, Noordam, Rotterdam, 347 rolls.

PHOTO PAPER

Gevaert Company of America, Finland, Antwerp, 94 cs.
J. J. Gavin, Adriatic, Liverpool, 4 cs.

TISSUE PAPER

C. H. Wyman Shipping Company, Adriatic, Liverpool, 4 cs.
H. Reeve Angel & Co., Hansa, Hamburg, 8 bls.

WRAPPING PAPER

D. S. Walton & Co., Hansa, Hamburg, 613 rolls, 8 bls.
T. Barrett & Sons, by same, 72 bls., 36 rolls.
W. Schall & Co., by same, 1,692 rolls.

GLASS PAPER

J. L. N. Smythe & Co., Hansa, Hamburg, 11 cs.

PACKING PAPER

C. K. MacAlpine, Noordam, Rotterdam, 1,605 bdls.
M. O'Meara Company, Mercier, Antwerp, 78 bls.

PAPER

H. Reeve Angel & Co., Berengaria, Liverpool, 2 cs.
J. C. Robold & Co., by same, 2 cs.
The Romeo Company, Mesaba, London, 8 rolls.
Birn & Wachenheim, Finland, Antwerp, 34 cs.
Birn & Wachenheim, Hanover, Bremen, 50 bls.
Alpers & Mott, by same, 55 cs.
Virginia Paper Company, by same, 131 bls.
H. Reeve Angel & Co., by same, 14 rolls.
J. Harris & Co., by same, 113 rolls, 96 bls.
M. O'Meara Company, by same, 54 bls.
Parsons & Whittemore, by same, 978 rolls.
F. Heujes, Jr., Noordam, Rotterdam, 27 cs.
C. Steiner, by same, 13 cs.
W. F. Etherington & Co., Tarantia, Glasgow, 53 cs.
Equitable Trust Company, Albania, Hamburg, 49 bls., 2 cs.
C. B. Richard & Co., by same, 5 cs.
Republic Bag & Paper Company, Orduna, Hamburg, 135 rolls, 333 bls.
Bendix Paper Company, by same, 94 bls.
Miller Paper Company, by same, 25 bls., 1,038 rolls.
Klein Brothers Paper & Twine Company, by same, 193 rolls, 10 bls.
Central N. Y. Supply Company, by same, 23 bls., 334 rolls.
M. M. Cohen, by same, 170 rolls, 445 bls.
Libby & Williams Paper Company, by same, 45 bls., 239 rolls.
Great Notch Paper Company, Inc., by same, 538 bls.
Banco de Sonora Hermosielle, Bourbonnais, Genca, 120 rolls.
A. Murphy & Co., Rochambeau, Havre, 6 cs.
Birn & Wachenheim, by same, 11 cs.
Japan Paper Company, by same, 5 cs.
Keller & Co., by same, 6 cs.
Rose & Frank, by same, 50 cs.
Windowphanie Company, by same, 4 bls.

RAGS, BAGGINS, ETC.

E. J. Keller Company, Inc., Argus, Antwerp, 84 bls. flax waste.
E. J. Keller Company, Inc., Missouri, Antwerp, 144 bls. flax waste.
E. J. Keller Company, Inc., Seattle Spirit, Hamburg, 47 bls rags.
Katzenstein & Keene, Inc., C. of St. Joseph, Genoa, 130 bls. rags.
Castle & Overton, V. de Djiboute, Rouen, 179 bls. rags.
Castle & Overton, Capulin, Hull, 56 bls. rags.
M. O'Meara Company, Francisco, Hull, 195 bls. rags.
Irving National Bank, Finland, Antwerp, 301 bls. flax waste.
Irving National Bank, Adriatic, Liverpool, 467 bls. cotton waste.
J. Spunt & Co., C. of Melbourne, Shanghai, 147 bls. cotton waste.
Lenin & Rosenberg, Pr. Adams, London, 163 bls. rags.
Castle & Overton, Noordam, Rotterdam, 42 bls. rags.
S. Silberman, Noordam, Rotterdam, 348 bls. paper stock, 109 bls. new cuttings.
Waste Material Trading Company, by same, 35 bls. baggings.
Irving National Bank, Tarantia, Glasgow, 268 bls. paper stock.
Royal Waste Manufacturing Company, Victorious, Shanghai, 150 bls. cotton waste.
Albion Trading Company, Bolivian, Manchester, 73 bls. rags.
Ayres & Oddy Company, Inc., by same, 178 bls. cotton waste.
Irving National Bank, by same, 254 bls. cotton waste.
International Acceptance Bank, by same, 151 bls. new cuttings, 96 bls. paper stock.
Irving National Bank, Southwestern Miller, London, 31 bls. rags.
Equitable Trust Company, by same, 63 bls. waste paper.

OLD ROPE

Brown Brothers & Co., Francisco, Hull, 230 coils.
Brown Brothers & Co., Wells City, Bristol, 194 coils.
Brown Brother & Co., Noordam, Rotterdam, 150 coils.
L. H. Abenheimer, by same, 64 coils.
N. E. Bergen, Pastores, Havana, 5 bls.
W. Schall & Co., Buckleigh, Barcelona, 137 coils.
Bemis Brothers Bag Company, by same, 60 coils.
E. J. Keller Company, Inc., Capulin, Leith, 54 coils.

WOOD PULP

Woodpulp Trading Company, Ltd., Skiensfjord, Kristiania, 12,750 bls.
M. Gottesman & Co., Inc., Seattle Spirit, Hamburg, 5,003 bls., 728 tons.
M. Gottesman & Co., Inc., Hanover, Kallero, 1,270 bls.
H. Hollesen, Hanover, Bremen, 2,000 bls.
Nilsen, Lyon & Co., Inc., Hansa, Hamburg, 250 bls., 50 tons.
Castle & Overton, by same, 1,060 bls., 212 tons.
Castle & Overton, Noordam, Rotterdam, 1,102 bls.
Tidewater Papermills Company, Tosto, Liverpool, N. B., 21,674 bls., 2,167 tons.

CASEIN

T. M. Duche & Sons, West Eldara, Bordeaux, 133 bags, 10,049 kilos.
A. Klipstein & Co., Rochambeau, Havre, 20 bags.

CHINA CLAY

C. T. Wilson & Co., Inc., Wells City, Bristol, 50 casks.
Mediterranean General Traders, Inc., by same, 20 casks.
C. B. Richard & Co., by same, 200 bags.

BALTIMORE IMPORTS

WEEK ENDING JANUARY 6, 1923.

R. F. Hammond, Arna Hermosand, 330 bls., 55 tons wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING JANUARY 6, 1923.

Castle & Overton, Kentucky, Havre, 215 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 6, 1923.

C. K. MacAlpine, Mahopac, Hamburg, 616 bdls. paper.
C. K. MacAlpine, by same, 5,183 rolls paper.
I. Webb, Riol, Liverpool, 76 bls. rags.
D. M. Hicks, by same, 48 bls. paper stock.
Ladenburg, Thalman & Co., Vincent, Havre, 214 bls. rags.
Columbia Bank, W. Eldara, Bordeaux, 312 bls. cotton waste, 216 bls. rags.
E. J. Keller Company, Inc., by same, 292 bls. rags.
Castle & Overton, by same, 236 bls. rags.
Equitable Trust Company, Bourbonnais, Oran, 454 bls. rags.
Ladenburg, Thalman & Co., Bourbonnais, Marseilles, 708 bls. rags.
Castle & Overton, Sw. Miller, London, 40 bls. waste paper.
Dill & Collins, by same, 122 bls. waste paper.
Equitable Trust Company, by same, 32 bls. waste paper.
London & Liverpool Bank of Commerce, by same, 79 bls. waste paper, 155 bls. rags.
D. J. Murphy, by same, 36 bls. rags.
Castle & Overton, Ivar, Copenhagen, 264 bls. rags.
Castle & Overton, Bradclyde, Hamburg, 143 bls. rags.
Castle & Overton, Breedyk, Amsterdam, 126 bls. rags.
Castle & Overton, Blydendyk, Rotterdam, 78 bls. rags.
Castle & Overton, West Isleta, Manchester, 406 bls. waste paper.
E. J. Keller Company, Inc., West Haven, Hamburg, 397 bls. rags.
E. J. Keller Company, Inc., West Haven, Antwerp, 179 bls. rags.
E. J. Keller Company, Inc., Missouri, Antwerp, 774 bls. rags.
E. J. Keller Company, Inc., V. de Djiboute, Marseilles, 123 bls. rags.
E. J. Keller Company, Inc., M. Shipper, Manchester, 122 bls. bagging.
E. J. Keller Company, Inc., Ausalde VIII, Genca, 32 bls. cotton waste.
E. J. Keller Company, Inc., Altmark, Hamburg, 1,432 bls. rags.
E. J. Keller Company, Inc., Janus, Marseilles, 91 bls. rags.
E. J. Keller Company, Inc., Bradclyde, Hamburg, 434 bls. rags.
Katzenstein & Keene, Inc., by same, 49 bls. rags.
Katzenstein & Keene, Inc., Madras City, Hamburg, 415 bls. rags.
Katzenstein & Keene, Inc., Malgache, Marseilles, 100 bls. rags.
J. Vandiner, Sw. Miller, London, 250 coils old rope.
Castle & Overton, Ivar, Copenhagen, 241 coils old rope.
Castle & Overton, Emden, Hamburg, 685 bls. wood pulp.

(*Continued on page 68*)

Felt Test—Lowest Cost per Ton

If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

PAPER MAKERS CHEMICAL CO.
WESTERN PAPER MAKERS CHEMICAL CO.

EASTON HOLYOKE KALAMAZOO
JACKSONVILLE PENSACOLA ST. AUSTELL

CLAYS ROSIN SIZE
SATIN WHITE FOAM KILLER

FELT SOAP and OTHER SPECIALTIES

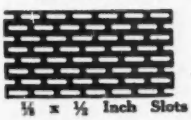
PULP STONES

of absolutely the finest quality

Lombard & Co., Incorporated
Importers and Dealers
236-238 A Street : BOSTON, MASS.
Branch at Montreal, Canada

Perforated Metal Screens
For Pulp and Paper Mills

.065 Inch Round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STEEL, COPPER, BRASS, BRONZE and other Alloys

punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

CHARLES MUNDT & SONS
53-65 FAIRMONT AVE. JERSEY CITY, N. J.

KRAFT PAPER WANTED

SIDE RUNS OR ODD LOTS

The larger the quantities the better we like it. No item of less than one ton of a size and weight wanted.

Box No. 5598, care of Paper Trade Journal.

WILLIAM A. HARDY & SONS COMPANY, Fitchburg, Mass., U.S.A.

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, JANUARY 10, 1923.

News print has continued active and very much in the lime light over the year end. It is estimated that the total production of this commodity for the past year will exceed that of 1921 by ten per cent or more. Imported print paper declined in volume about one-third under the total of foreign shipments for 1921, and the undertone of the market has firmed continually due partly to the low water conditions which have curtailed ground wood production and due larely to the phenomenal demand from consuming centers. Leading figures in the industry believe that 1923 will prove to be the greatest the trade has ever known.

According to several book paper dealers, prominent in the New York trade, their clientele is not nearly so reticent in regard to stocking up at least for the immediate future as it was at this time last year. The holiday buying inertia is gradually giving place to a substantial business that, while not of a phenomenal nature, bodes well for the book paper industry of 1923 in that it is consistent and regular. Confidence has, in the main, returned and the market is regarded as firm.

Fine papers enjoyed a corresponding enhancement in the number of inquiries and fair-sized orders attending the first full week's business of the new year. Prices have held steady and all indications would point to a healthy activity once the spring buying season gets under way. Considerable firmness exists in the undertone of the fine paper market and a perceptibly greater degree of confidence has been expressed in the attitude of consumers.

Tissues have held firm in point of price during the last week and a perceptible increase in business volume was apparent. High ground wood prices and the scarcity of this commodity lend strength to the tissue market and manufacturing hazards make it appear likely that there will be no recession in prices until well into the forthcoming year.

Kraft has failed to register any pronounced advances during the past week, but prices have remained on an even keel and it is felt that the market only lacks the stimulus of a brisk consuming demand for a continuation of the excellent business this market has enjoyed of recent months. Spot transactions during last week were of a light character but contract shipments moved along as usual.

The situation in the board market was ameliorated to a certain degree toward the close of the week, when the first manifestations of post-holiday buying made themselves apparent. Prices have held at the lowered levels reached just before Christmas and coming, probably, as a result of the weakening in the chemical pulp market at that time.

Mechanical Pulp

Water shortage in grinding regions has given rise to unusually active bidding for all available supplies of prime spruce ground wood, spot prices having ranged during the past week from $44 per ton upwards. Imported mechanical pulp has been quoted at $40 to $45, ex-dock, New York, with the Canadian quality a trifle below this. Using present conditions as a criterion, there is scarcely any relief in sight for ground wood producers until the spring season gets well under way and ample water supply may again be had.

Chemical Pulp

The first unbroken week's business of January has brought with it as certain acceleration in the buying of chemical pulps, although this market is still far from recovering the vigor it possessed before the blows dealt it by the holiday quietude as well as the price recessions which took effect last month. The fact that paper mills are well covered with orders for various grades extending over the next few months leads pulp dealers to anticipate a thorough resumption of pulp buying as soon as the stocks on hand have had opportunity to deplete and the mid-January buying season gets in motion.

Old Rope and Bagging

While buying during the week past has been for light tonnages in the main, old rope is in a firm position at the inception of the new year. Prices, it is felt by reliable authorities, will advance owing to the fact that rope accumulations are scanty and both imported and domestic grades have fallen off from a production standpoint.

Bagging, on the other hand, is still considerably below normal as far as the scrap grades are concerned and tissue manufacturers have been reluctant to stock up to any great extent on the No. 1 quality. Dealers feel that a better era of business is in sight within the next thirty to sixty days.

Waste Paper

Waste paper has continued to maintain the advances prognosticated in the latter part of the holidays and the strong undertone of the market has been reflected in steadily advancing prices in the lower grades as well as a considerable amelioration in the activity of the better grades. Dealers are not too anxious to book quantity orders for future delivery during the rising market and, on the whole, business during the coming two months is expected to parallel that attained in the fall of 1922 if not to exceed it.

Rags

Probably the most conspicuous feature of the rag market is the new vigor which has entered the roofing grades since the first of the year, quotational advances of approximately $1 per ton having taken effect. A certain degree of firmness pervades nearly every rag market of interest to the paper manufacturing trade and while the activity in cotton cuttings has been light, whites have held firm and blues steady. This condition gives rise to the belief that the rag market, for some months practically dormant, is on the verge of rehabilitation.

Twine

Twine dealers report that while the demand from consumers is of a decidedly hand-to-mouth character, supplies are gradually declining and that when buying activity commences a new level of twine prices automatically will be ushered in. Business is expected to accelerate by the first of February.

Imports of American Paper in Argentine

Among Latin-American countries Argentina ranks second as a market for paper and paper products made in the United States. It is surpassed only by Cuba, but the latter country has been regarded as part of the American domestic market, and efforts to develop it have been intensive. It is believed that if a corresponding effort to increase the trade with Argentina in this class of merchandise were put forth it would result in making that country one of the best customers, as, from the amount of paper consumed, it presents more possibilities than any of the Latin-American nations.

News print is the principal kind of paper imported into Argentina, which has a total annual consumption of 40,000 metric tons, practically all of which is imported. Most of this is consumed in the Federal District and Province of Buenos Aires.

The next paper in demand is known as "papel para obras." This is a machine finish with a high or supercalendered book surface. It is sized for writing purposes, so that it can be used for either printing or writing. Papers made in the United States with a litho finish and supercalendered are similar to this, but they would probably require a slightly harder sizing. Practically all grades of machine finish and supercalendered paper, hard sized for writing, would find a market.

The local mills in Argentina make some very good grades, but the production is not sufficient to meet the demand.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations January 9, 1923:

	BID	ASKED
American Writing Paper Company, pref.	27½	28¼
International Paper Company, com.	51¼	51¾
International Paper Company, pref., stamped	74¾	75
Union Bag & Paper Corporation	66	68

Paper

F. o. b. Mill.

Ledgers	11.00	@	38.00
Bonds	9.00	@	55.00
Writings—			
Extra Superfine	16.00	@	35.00
Superfine	14.00	@	30.00
Tub Sized	10.00	@	15.00
Engine Sized	8.50	@	11.00
News—f. o. b. Mill—			
Rolls, contract	3.85	@	4.00
Rolls, transit	4.00	@	—
Sheets	4.00	@	—
Side Runs	3.25	@	3.50
Book, Cased—f. o. b. Mill			
S. & S. C.	7.50	@	12.00
M. F.	7.00	@	10.00
Coated and Enamel	9.00	@	14.00
Lithograph	9.00	@	14.00
Tissues—f. o. b. Mill			
White, No. 1	.95	@	1.10
Colored	1.25	@	2.50
Anti-Tarnish	1.75	@	2.25
Silver Tissue	—	@	—
Manila	.90	@	1.00
Kraft—f. o. b. Mill—			
No. 1 Domestic	7.00	@	7.50
No. 2 Domestic	6.50	@	6.75
Imported	6.50	@	7.00
Screenings	3.15	@	3.40
Manila—			
No. 1 Jute	8.50	@	9.00
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.50	@	5.50
No. 2 Wood	4.00	@	4.50
Butchers	4.25	@	4.75
Fiber Papers—			
No. 1 Fiber	6.00	@	6.25
No. 2 Fiber	5.25	@	5.50
Common Bogus	3.50	@	—
Card Middies	4.00	@	5.00
Boards—per ton—			
News	60.00	@	65.00
Straw	65.00	@	70.00
Chip	55.00	@	60.00
Binders' Board	75.00	@	85.00
Sgl. Mla. Ll.Chip	65.00	@	70.00
Wood Pulp	—	@	—
Container	75.00	@	80.00
Wax Paper—			
Self Sealing White 28 and 30 lb. basis	11.00	@	12.00
Waxed Tissue	1.60	@	1.80
Glassine—			
Bleached, basis 25 lbs.	15.00 nominal		
Bleached, basis 20 lbs.	13.00 nominal		
Papermakers' Felts, per ton—			
Dry	75.00	@	85.00
Saturated	65.00	@	75.00
Sheathing Paper, per ton—			
Rosin Sized (red and gray, 30 lbs. per 500 sq. ft.)	55.00	@	65.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	40.00	@	45.00
No. 1 Domestic	42.00	@	46.00
For immediate shipment	46.00	@	—

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—			
Bleached	4.25	@	4.75
Easy Bleaching	3.00	@	3.25
No. 1 strong unbleached	2.80	@	3.00
No. 2 Strong unbleached	2.65	@	3.00
No. 1 Kraft	2.85	@	3.00
Sulphate—			
Bleached	4.00	@	4.25
(F. o. b. Pulp Mill.)			
Sulphite (Domestic)—			
Bleached	4.50	@	5.00
Strong unbl'chd.	2.90	@	3.20
Easy Bleaching Sulphite	3.00	@	3.25
News Sulphite	2.75	@	3.00
Mitscherlich	2.85	@	3.15
Kratt (Domestic)	3.10	@	3.25
Soda Bleached	4.25	@	4.50

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—			
New White, No. 1	11.50	@	12.00
New White, No. 2	6.50	@	7.00
Silesias, No. 1	7.50	@	8.00
New Unbleached	9.00	@	9.50
Washables	4.50	@	5.00
Fancy	6.25	@	6.75
Cotton—according to Grades—			
Blue Overall	5.50	@	6.00
New Blue	4.75	@	5.00
New Black Soft	5.50	@	6.00
New Light Seconds	2.75	@	3.00
O. D. Khaki Cuttings	4.00	@	4.50
Men's Corduroy	3.00	@	3.25
New Canvas	7.00	@	7.25
New Black Mixed	2.50	@	2.75
Old			
White, No. 1—			
Repacked	6.50	@	6.75
Miscellaneous	5.50	@	5.75
White, No. 2—			
Repacked	3.25	@	3.50
Miscelaneous	5.50	@	5.75
St. Soiled White	1.75	@	1.85
Thirds and Blues—			
Repacked	1.90	@	2.10
Miscellaneous	1.50	@	1.60
Black stockings	2.90	@	3.25
Roofing Rags—			
Cloth Strippings	1.10	@	1.20
No. 1	1.10	@	1.20
No. 2	1.00	@	1.10
No. 3	.80	@	.90
No. 4	.80	@	.90
No. 5A	1.00	@	1.10

Foreign Rags

New Light Silesias	6.00	nominal	
Light Flannelettes	6.75	nominal	
Unbl'chd Cottons	7.50	nominal	
New White Cuttings	9.50	nominal	
New Light Oxfords	6.00	nominal	
New Light Prints	4.50	nominal	
New Mixed Cuttings	2.00	@	2.50
New Dark Cuttings	1.90	@	2.10
No. 1 White Linens	9.00	@	11.00
No. 2 White Linens	6.50	nominal	
No. 3 White Linens	5.00	nominal	
No. 4 White Linens	3.50	nominal	
Old Extra Light Prints	2.00	nominal	
Ord. Light Prints	1.75	nominal	
Med. Light Prints	1.50	nominal	
Dutch Blue Cottons	1.85	nominal	
German Blue Cottons	1.60	@	1.70
Ger. Blue Linens	3.50	nominal	
Checks and Blues	1.50	nominal	
Dark Cottons	1.30	@	1.35
Shoppery	1.00	@	1.05
French Blues	1.75	@	2.00

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—			
Foreign	1.00	@	1.10
Domestic	1.00	@	1.10
Wool, Tares, light	1.45	@	1.55
Wool, Tares, heavy	1.40	@	1.50
Bright Bagging	1.05	@	1.20
No. 1 Scrap	1.05	@	1.20
Sound Bagging	.85	@	.95
Manila Rope—			
Foreign	5.75	@	6.00
Domestic	6.00	@	6.25
New Bu. Cut	2.25	@	2.45
Hessian Jute Threads—			
Foreign	2.25	@	2.50
Domestic	2.20	@	2.40
Mixed Strings	.90	@	1.00

Twines

Cotton—(F. o. b. Mill)			
No. 1	.35	@	.37
No. 2	.31	@	.33
No. 3	.37	@	.39
India, No. 6 basis—			
Light	.20	@	.21
Dark	.19	@	.20
B. C., 18 Basis	.41	@	.42
A. B. Italian, 18 Basis	.51	@	.61
Finished Jute—			
Dark, 18 basis	.29	@	.30
Light, 18 basis	.26	@	.27
Jute Wrapping, 3-6 Ply—			
No. 1	.23	@	.24
No. 2	.21	@	.22
Tube Rope—			
4-ply and larger	.15	@	.17
Fine Tube Yarn—			
5-ply and larger	.19	@	.21
4-ply	.20	@	.22
3-ply	.20	@	.22
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine Balls	.13	@	.15
Box Twine, 2-3 ply	.18	@	.19
Jute Rope	.17	@	.20
Amer. Hemp, 6	.33	@	.35
Sisal Hay Rope—			
No. 1 Basis	.15	@	.17
No. 2 Basis	.13	@	.15
Sisal Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.18	@	.19

Old Waste Papers

(F. o. b. New York)

Shavings—			
Hard, White, No. 1	4.20	@	4.40
Hard, White, No. 2	3.75	@	4.15
Soft, White, No. 1	3.60	@	3.80
Flat Stock—			
Stitchless	2.65	@	2.70
Over Issue Mag.	2.75	@	2.75
Solid Flat Book	2.45	@	2.50
Crumpled No. 1	2.10	@	2.15
Solid Book Ledger	3.00	@	3.25
Ledger Stock	2.70	@	2.80
New B. B. Chips	1.00	@	1.10
Manilas—			
New Env. Cut	2.75	@	2.90
New Cut No. 1	2.00	@	2.25
Extra No. 1 Old	1.80	@	1.90
Print	1.55	@	1.65
Container Board	1.25	@	1.35
Bogus Wrapper	1.10	@	1.20
Old Krafts, machine compressed Bales	2.15	@	2.25
News—			
No. 1 White News	2.05	@	2.20
Strictly Overissue	1.35	@	1.40
Strictly Folded	1.20	@	1.35
No. 1 Mixed Paper	.90	@	.95
Common Paper	.70	@	.75

CHICAGO

[FROM OUR REGULAR CORRESPONDENT]

Paper

F. o. b. Mill

All Rag Bond	35	@	40
No. 1 Rag Bond	30	@	35
No. 2 Rag Bond	18	@	25
Water Marked Sulphite	10	@	14
Sulphite Bond	9½	@	12
Sulphite Ledger	12	@	14
Superfine Writing	18	@	24
No. 1 Fine Writing	14	@	22
No. 2 Fine Writing	12	@	20
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book	6½	@	7
No. 1 S. & S. C. Book	7	@	7½
Cooated Book	8¾	@	9
Coated Label	8½	@	8¾
News—Rolls mill	4	@	4½
News—Sheets, mill	4¼	@	4¾
No. 1 Manila	4¾	@	6
No. 1 Fiber	5¼	@	5¾
No. 2 Manila	4½	@	5
Butchers' Manila	4	@	4½
No. 1 Kraft	7	@	7½
No. 2 Kraft	6½	@	7
Wood Tag Boards	4½	@	5
Screenings	3	@	4
Boards, per ton—			
Plain Chip			
Solid News			
Manila Lined Chip	All quotations withdrawn		
Container Line—			
85 Test			
100 Test			

Old Papers

Shavings—			
No. 1 Hard White	4.15	@	4.35
No. 1 Soft Shav.	3.75	@	4.00
No. 1 Mixed	1.65	@	1.75
No. 2 Mixed	1.65	@	1.75
White Envel. Cuttings	4.15	@	4.35
Ledgers and Writings	3.00	@	3.15
Solid Books	2.75	@	3.00
No. 1 Books, Light	2.55	@	2.70
Blanks	2.10	@	2.35
Ex. No. 1 Manila	2.35	@	2.50
Manila Envelope Cuttings	2.40	@	2.60
No. 1 Manilas	1.75	@	2.00
Folders News (over issue)	1.65	@	1.75
Old Newspaper	1.60	@	1.70
Mixed Papers	1.50	@	1.60
Straw Clippings	1.50	@	1.60
Binders Clippings	1.50	@	1.60
Kraft	2.50	@	2.60
New Kraft Cuts	2.60	@	2.75
Roofing Stock, f. o. b. Chicago, Net Cash—			
No. 1	26.00	@	—
No. 2	24.00	@	—
No. 3	22.00	@	—
No. 4	22.00	@	—

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.10	@	.60
Ledgers	.15	@	.40
Writings—			
Superfine	.15	@	.20
Extra fine	.12	@	.22
Fine	.20	@	.30
Fine, No. 2	.20	@	.25
Fine, No. 3	.15	@	.20
Book, M. F.	.06	@	.11
Book, S. S. & C.	.08	@	.15
Book, Coated	.08	@	.15
Coated Lithograph	.10	@	.15
Label	.08	@	.15
News	.05	@	.07
No. 1 Jute Manila	.12	@	.13
Manila Sul., No. 1	.08	@	.10
Manila No. 2	.07½	@	.08
No. 2 Kraft	—	@	.10
No. 1 Kraft	—	@	.11
Common Bogus	.02½	@	.03
Straw Board	67.50	@	70.00
News Board	58.00	@	
Chip Board	58.00	@	
Wood Pulp Board (Carload Lots)	1.20	@	1.25
Binder Boards—			
Per ton	80.00	@	
Carload lots	80.00	@	
Tarred Felts—			
Regular	48.00	@	50.00
Slaters	54.00	@	56.00
Best Tarred, 1-ply (per roll)	1.35	@	1.50
Best Tarred, 2-ply (per roll)	1.00	@	1.15
Best Tarred, 3-ply	1.50	@	1.65

Bagging

F. o. b. Phila.

Gunny No. 1—			
Foreign	1.10	@	
Domestic	1.10	@	
Manila Rope	5.25	@	5.75
Sisal Rope	.75	@	.80
Mixed Rope	.75	@	.80
Scrap Burlaps	1.00	@	1.25
Wool Tares, heavy	2.50	@	2.75
Mixed Strings	.75	@	.80
No. 1, New Lt. Burlap	1.75	@	2.00
New Burlap Cuttings	1.75	@	2.10

Old Papers

F. o. b. Phila.

Shavings—			
No. 1, Hard White	4.00	@	4.35
No. 2, Hard White	3.50	@	3.75
No. 1 Soft White	3.60	@	3.75
No. 2 Soft White	2.00	@	2.25
No. 1 Mixed	1.50	@	1.75
No. 2 Mixed	1.00	@	1.35

(Continued on page 70)

Imports and Exports of Paper and Paper Stock

(*Continued from page 64*)

Castle & Overton, Ivar, Christiania, 6,500 bls. wood pulp.
M. Gottesman & Co., Inc., Nornega, Christiana, 750 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING JANUARY 6, 1923.

Castle & Overton, New Britain, Hamburg, 330 bls. wood pulp.
Castle & Overton, West Nosska, London, 350 bls. waste paper.
G. M. Graves & Co., Inc., Bolivian, Manchester, 135 bls. waste paper.
First National Bank of Boston, by same, 390 bls. cotton waste.
True & McClelland, by same, 58 bls. cotton waste.
New England Waste Company, by same, 205 bls. cotton waste.
Hill & Cutler Company, by same, 113 bls. cotton waste.
Ayres & Oddy Company, Inc., by same, 403 bls. cotton waste.
Textile Trading Company, by same, 34 bls. cotton waste.
Baring Brothers & Co., by same, 149 bls. paper stock.
Irving National Bank, by same, 15 bls. new cuttings.
E. Butterworth & Co., Inc., by same, 110 bls. paper stock, 150 bls. hide cuttings.
J. B. Moors & Co., by same, 68 bls. hide cuttings.
Ashworth, Speakman & Co., by same, 202 bls. hide cuttings.

Appeal for German Paper Makers

The Papier Zeitung, Dessauer Strasse Nr. 2, Berlin S. W. 11, Germany, has requested the PAPER TRADE JOURNAL to reprint the following from its Third International Number, which explains itself:

Many an importing house abroad deriving big profits from its trade with German goods, may have felt a desire to divert part of these profits towards allaying the hardships German workmen are subjected to. Such a desire would be the more comprehensible as everywhere, Germany not excepted, employers are assisting the workmen suffering from want, especially those in their own line of business, to the limit of their powers, whereas importers and exporters do their trade mainly through the efficiency of foreign workers.

In Germany, good care had been taken until lately of the veteran workman, inasmuch as every workman was granted, through State-managed insurance, from his 65th year on, a pension sufficient to eke out a living. Most workmen, besides, had saved up, through economy in their active years, a certain amount of their old age. The German worker has been protected, moreover, for many years, by State-managed insurance, in cases of sickness and professional accidents. By the great depreciation of the German Mark, however, savings have lost their value, and the impoverished State is unable to increase, even approximately, the pensions, old age and accident payments in such a way as to render them sufficient for anybody to live on. Thus the incapacitated German workman is exposed to hardship and suffering.

An appeal and an example may be sufficient to find a solution of this problem satisfactory to both parties—to those who wish to give, and those who are in need of gifts. If the example is set in *one* branch of business, it may be hoped that others will follow. Eugene Singer, of Milwaukee, who knows conditions in Germany by repeatedly staying in our country, has suggested that we publish an appeal suitable to the occasion, and we hereby take up his counsel. The firm of Eugene Singer K. m. b. H., Berlin W 30, Luitpoldstrasse 27, places the amount of M. 100,000.—at our disposal, this sum to serve as a start for a collection for the benefit of German workers of the paper branch. We assign this amount to the Relief Association of the German Paper Industry in Chemnitz, Annabergstrasse 81, whose chairman, Herr Kommerzienrat Adolf Schinkel, of the Patent Paper Factory in Penig, offers full guarantee that all contributions will be properly used for the afore-mentioned purpose. The Relief Association has been in existence for many decades; it takes care primarily of employees and workmen with a long record of service, who have been, for the most part, members of the Association for many years; it assists likewise the widows and orphans of these members.

According to the statutes of the Association, not only people belonging to the paper and pulp manufacturing line, but also of the paper converting trade may become its members, but essentially the members belong to the paper manufacturing branch. If, as we confidently hope, our collection should yield a considerable amount, it is our intention, with the assistance of the "League of German Associations of the Publishing, the Printing and Paper Converting Trades," to use a proper part of the amount for aiding persons in need belonging to the professions represented in the said League.

The Prussian Ministry for Public Welfare has approved of this collection. Donations from abroad should be addressed to the Editorial Offices of the "Papier-Zeitung," registered and made by check or bank notes, with a precise statement of the purpose for which the contribution is to be used; remittances from Germany should be sent through the Mail Check Account (Postscheckkonto) Berlin No. 18,909 with the remark: Papier-Zeitung, Ab teilung "Liebesgaben." The contributions will be duly receipted in the "Papier-Zeitung."

Manufacture of Cordage and Twine, 1921

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 8, 1923.—The Department of Commerce announces that reports made to the Bureau of the Census show a decrease in the activities of the establishments engaged primarily in the manufacture of cordage and twine during the year 1921 as compared with 1919. The total value of products reported amounted to $74,712,000 in 1921, and to $133,336,000 in 1919, a decrease of 44 per cent. In addition, rope, cordage and twine to the value of $3,473,000 in 1921 and $9,163,000 in 1919 were reported by manufacturers whose chief products were jute and linen goods. Also, cordage and twine valued at $8,958,000 were reported in 1919 by cotton mills and establishments in other industries; corresponding figures for 1921 are not available at this time.

The decrease in production has been accompanied by decreases in the number of persons employed, in the amount paid during the year in wages, and in the cost of materials used.

Of the 115 establishments reporting products valued at $5,000 and more in 1921, 17 were located in New York; 14 in Pennsylvania; 13 in Massachusetts; 12 in Connecticut; 7 in Ohio; 6 each in Kentucky and New Jersey; 5 in Alabama; 4 each in North Carolina and Rhode Island; 3 each in Illinois and Missouri; 2 each in Michigan, South Carolina, Tennessee, and Wisconsin; and 1 each in California, Delaware, Georgia, Indiana, Maine, Maryland, Minnesota, Mississippi, Oklahoma, Oregon, Texas, Virginia and Washington. Massachusetts, the leading state in the industry in 1921, reported 24.3 per cent of the total value of products in that year.

In December, the month of maximum employment, 16,031 wage earners were reported, and in July, the month of minimum employment, 11,806—the minimum representing 73.6 per cent of the maximum. The average number employed during 1921 was 14,496 as compared with 17,622 in 1919. The reports show that 5,213 or 36 per cent of the total (average) number of wage earners were employed 48 hours or less per week; 6,017, or 41.5 per cent, between 48 and 54 hours; and 3,264, or 22.5 per cent, 54 hours or more per week.

The returns indicate that the combined output of all establishments was approximately 65 per cent of the maximum capacity, based upon a demand requiring full running time.

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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, January 9, 1923.

BLEACHING POWDER.—While dealers report an increased activity in the bleach market, prices have held in the neighborhood of 2.00 cents a pound throughout the past week. It is reported that this price is shaded a trifle on large quantity purchases.

BLANC FIXE.—Maintaining the advance which occurred several weeks ago, bringing the spot price to a range of $85 to $90 per ton, blanc fixe has been moving freely to mills since the beginning of the new year. Blanc fixe pulp has remained in a firm position at $45 to $50 per ton.

CAUSTIC SODA.—Domestic prices on caustic soda have ruled quite firm throughout the past week, the contract figure of 2.50 cents a pound prevailing in the bulk of transactions. Caustic producers are gradually overcoming many of the difficulties which confronted them last Fall and Winter and prospects are that the steady demand from mills will further strengthen the market.

CHINA CLAY.—Dealers in China Clay reported a satisfactory week's business with buying picking up after the holiday lull. Clay prices are regarded as firm, $16 to $23 per ton representing the average range of quoted prices on the imported qualities, while the domestic washed grade has been equally active at $12 to $15 and unwashed at $9.50 to $12.

CASEIN.—Casein dealers have, for some time, refused to sell on contract for more than a month in advance, and frequently this period has been lessened to two weeks owing to the spotty character of Argentinian imports. For several months the market has been entirely in the hands of the seller, needy mills paying almost any price for the scarce milk by-product. The nominal contract price is still held at 21 to 22 cents a pound.

PAPERMAKERS' GLUE.—Glue, as a substitute for casein, is increasing in the demand of paper mills, a noticeable enlivenment in demand having been noted in the past week. Quoted prices on standard grades of hide glue for use in tub sizing range from 13 to 20 cents a pound, depending upon the consistency.

ROSIN.—No drastic price changes have entered the rosin market over the year end although the quotation of 7.00 cents a pound, ex dock New York for grades E, F and G may be regarded as nominal. This quotation holds for barrels of 100-pounds, the Savannah, Ga. price averaging approximately 1 cent less.

SALTCAKE.—Listed at $27 to $28 per net ton, f. o. b. producer, acid cake has held in steady demand and production facilities have improved to a certain extent. Chrome cake is still quoted at $24 to $25.

SODA ASH.—As with other alkalies, soda ash has held quite firm during the first whole week's trading of the new year. Held to the schedule price of 1.20 cents a pound by the close competition this market has increased in strength as a result of improved consuming demand.

STARCH.—Bag and barrel lots of the papermakers' grade of starch have been quoted throughout the week at 2.82 and 3.10 cents a pound respectively by several of the larger manufacturers of this commodity. Powdered starch remains in good call at 2.72 and 3.00 cents for these amounts.

SULPHATE OF ALUMINA.—Transactions involving moderate-sized quantities of aluminum sulphate have been consummated during the past week at the price of 2.55 to 2.80 cents a pound, though production is still severely curtailed. The commercial grade quotes at 1.50 to 1.75 cents and the market has a strong tone.

SULPHUR.—No change has entered the sulphur market with the coming of 1923, contract prices holding at the old schedule of $18 to $20 per ton. Buying is reported to have accelerated somewhat in the past week.

Market Quotations

(Continued from page 67)

Solid Ledger Stock.	2.75	@	3.00
Writing Paper.....	2.50	@	2.75
No. 1 Books, heavy.	2.25	@	2.50
No. 2 Books, light.	1.40	@	1.50
No 1 New Manila..	2.75	@	3.00
No 1 Old Manila...	1.50	@	1.75
Container Manila...	1.35	@	1.40
Old Kraft.....	2.25	@	2.50
Overissue News....	150	@	1.60
Old Newspaper.....	1.20	@	1.25
No. 1 Mixed Paper.	1.10	@	1.15
Common Paper.....	1.00	@	1.10
Straw Board, Chip.	1.00	@	1.10
Binders Bd., Chip..	1.00	@	1.10
Domestic Rags—New. Price to Mill, f. o. b. Phila.			
Shirt Cuttings—			
New White, No. 1.	11¾	@	.11¾
New White, No. 2	.06	@	
Silesias, No 1....	.06½	@	.07
New unbleached..	.10¾	@	
Washables	.03¾	@	
Fancy	04¾	@	.05¾
Cottons—according to grades—			
Blue Overall....	.05½	@	.05¾
New Blue.....	.02¾	@	.02¾
New Black Soft.	.06¼	@	.06½
New Light Seconds	.02¾	@	.02¾
Khaki Cuttings..	.03½	@	.04¼
Corduroy	.03½	@	.03¾
New Canvass....	.07½	@	.08
New Black Mixed	.04	@	
Old			
White, No. 1—			
Repacked	.06	@	.06½
Miscellaneous ...	.04½	@	.04¾
White, No. 2—			
Repacked	.03	@	.03½
Miscellaneous ...	.03	@	.03¼
Thirds and Blues—			
Repackeed	200	@	2.25
Miscellaneous ...	1.85	@	1.90
Black Stockings....	2.75	@	3.00
Roofing Stock—			
No. 1.....	1.30	@	1.35
No 2.....	1.20	@	1.25
No 3.....	1.10	@	1.15
No. 4.....	110	@	1.15
No. 5A.....	1.05	@	110
B.....			nominal
C.....			nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT]

Paper

Bonds	.08	@	.50
Ledgers	.08½	@	.55
Writings	.08	@	.42
Superfine	.16	@	.26
Fine	.15	@	.18
Books, S. & S. C..	.07¼	@	.12
Books, M. F.....	.06¾	@	.09½
Books, coated	.09	@	.15
Label	.08½	@	.13
News, sheets	4.75	@	6.00
News, rolls	4.50	@	5.75
Manilas—			
No. 1 Manila...	$6.00	@	7.00
No. 1 Fiber	.06½	@	.07
No. 1 Jute	9.00	@	10.50
Kraft Wrapping ..	.07	@	
Common Bogus ...	3.50	@	3.85

Boards

(Per Ton Destination)

Chip	$52.50	@	57.50
News, Vat Lined...	57.50	@	60.00
Wood, Vat Lined..	65.00	@	67.50
Filled News Board.	57.50	@	60.00
Solid News Board..	65.00	@	70.00
S. Manila Chip...	70.00	@	75.00
Pat. Coated	85.00	@	92.50

Old Papers

Shavings—			
No. 1 Hard White	4.25	@	4.50
No. 1 Soft White	3.00	@	3.50
No. 1 Mixed.....	1.25	@	1.50
Ledgers & Writings	1.75	@	2.00
Solid Books.....	2.25	@	2.50
Blanks	1.70	@	1.80
No. 2 Light Books.	1.75	@	1.90
Folded News, overissues	26.00	@	28.00
Gunny Bagging ...	.85	@	.90
Manila Rope.....	5.75	@	6.00
Common Paper.....	.60	@	.70
Old News	.80	@	.90
Old Kraft	2.00	@	2.10

TORONTO

[FROM OUR REGULAR CORRESPONDENT]

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted.....	.12	@	.13½
Dark tinted.....	.13½	@	.15
Ledgers (sulphite).	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads).	3.75	@	—
Sheets (carloads)..	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	9.00	@	—
No. 2 M. F. (carloads)	8.00	@	—
No. 3 M. F. (carloads)	7.50	@	—
No. 1 S. C. (carloads)	9.50	@	—
No. 2 S. C. (carloads)	8.50	@	—
No. 1 Coated and litho.	14.00	@	—
No. 2 Coated and litho.	13.00	@	—
No. 3 Coated and litho.	12.25	@	—
Coated and litho., colored	14.25	@	—
Wrapping—			
Grey	5.00	@	—
White Wrap....	5.75	@	—
"B" Manila.....	6.00	@	—
No. 1 Manila....	7.25	@	—
Fiber	7.25	@	—
Kraft, M. F.	8.00	@	—
M. G.	8.15	@	—

Pulp

(F. o. b. Mill)

Ground wood.....	$40.00	@	50.00
Sulphite easy bleaching	60.00	@	70.00
Sulphite news grade.	55.00	@	60.00
Sulphite, bleached.	100.00	@	105.00
Sulphate	70.00	@	—

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut..	3.85	@	—
Soft White Book Shavings	3.50	@	
White Bl'k News.	2.00	@	—
Book and Ledger—			
Flat Magazine and Book Stock(old)	2.30	@	—
Light and Crumpled Book Stock	2.15	@	—
Ledgers and Writings	2.50	@	—
Solid Ledgers....	2.50	@	
Manilas—			
New Manila Cut.	2.10	@	
Printed Manilas..	1.75	@	—
Kraft	2.50	@	—
News and Scrap—			
Strictly Overissue	1.40	@	
Folded News....	1.40	@	
No. 1 Mixed Papers	.90	@	
Domestic Rags—			
Price to mills, f. o. b. Toronto.			Per lb.
No. 1 White shirt cuttings	.11	@	.11¾
No. 2 White shirt cuttings	.06	@	—
Fancy shirt cuttings	.06	@	—
No. 1 Old whites	.04	@	—
Thirds and blues	2.15	@	2.35
			Per cwt.
Black stockings...	2.50	@	—
Roofing stock:			
No. 1	1.25	@	—
No. 2	1.00	@	—
Roofing stock:			
Manila rope.....	6.10	@	
No. 2.....	1.50	@	
Gunny bagging....	1.00	@	